START

DOE/RL/12074--29 Rev. 0

SOURCE INVENTORY DEVELOPMENT ENGINEERING STUDY FOR THE ENVIRONMENTAL RESTORATION DISPOSAL FACILITY

March 23, 1994

Work Performed Under Master Interagency Agreement
NO. DE-AI06-90RL12074
Task Order DE-AT06-93RL12107

Prepared for
U.S. Department of Energy
Operations Office, Richland

Prepared by
DEPARTMENT OF THE ARMY
Walla Walla District, Corps of Engineers
Walla Walla, Washington 99362-9265

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CENPW INFORMATION RELEASE REQUEST (CEIRR)

1. Purpose.

Type of Information Release Document
Title Source Inventory Development Engineering Study for the ERDF
Document No. DOE/RL/12074--29
Revision No. 0
Brief Description Identification/description of wastes to be disposed of in ERDF

Unclassified Category N/A
Previous Clearance Approval Info N/A

2. CENPW Review.

Reviewer	Name/Title	Signature	Date
CENPW Peer Review, Tech Mgr	Greenwald/TM	Wendell Greenwald	Apr 1 94
CENPW Peer Review, Div Chief	Kevin Oates	Kevin Oates	4/1/94
~~CENPW Special Assistant for~~ Quality Assessment auditor	Keith Neavor	Keith Neavor	18 April 94
CENPW Editorial Review	Cpt. Rhoades	Craig Rhoades	20 Apr 94

3. CENPW Project Manager Request

Responsible Manager/Requester	Name/Title	Signature	Date
CENPW Project Manager	Cpt. Rhoades	Craig Rhoades	20 Apr 94

4. NPW-OC ~~DOE~~-RL Review

Reviewer	Name/Title	Signature	Date
~~DOE-RL~~ Legal and Patent Review See attached memo	James Brent ~~Southworth/OCC~~	[signature]	4-22-94
DOE-RL Programmatic Review	Collins/PMD	[signature]	28 Apr 94

5. CENPW Document Clearance Approval

Approved for Release	Name/Title	Signature	Date
CENPW Project Mngr Approval	Cpt. Rhoades	Craig Rhoades	28 Apr 94

NOTE: Document classification is not required for USACE documents, per DOE-RL Serial Letter No. 93-EPB-027, dated 13 January 1993.

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DEPARTMENT OF THE ARMY
WALLA WALLA DISTRICT, CORPS OF ENGINEERS
WALLA WALLA, WASHINGTON 99362-9265

REPLY TO
ATTENTION OF:

CENPW-OC (200) 22 April 1994

MEMORANDUM FOR CENPW-EN-EE (Wendell Greenwald)

SUBJECT: Source Inventory Development Engineering Study for the Environmental Restoration Disposal Facility

1. Pursuant to the Interagency Agreement (IA) between the U.S. Army Corps of Engineers (USACE) and the Department of Energy, Richland Operations Office (DOE-RL) and recent guidance from DOE-RL (document 94-EPB-041, 25 March 1994) stating that USACE Office of Counsel shall review "any documents prepared by USACE or it's contractors prior to release to the public," the above-referenced document has been reviewed for public release.

2. Document "Source Inventory Development Engineering Study for the Environmental Restoration Disposal Facility", DOE/RL/12074--29 Rev. 0, is approved for public release.

3. The approval for public release is only for document "Source Inventory Development Engineering Study for the Environmental Restoration Disposal Facility", DOE/RL/12074--29 Rev. 0. Further revisions of this document will need to be reviewed for public release as well. The review process may be expedited by highlighting the altered sections or additional language before submitting the revision to CENPW-OC for review.

4. If you have questions regarding CENPW-OC document review, you may contact me at (509) 522-6500.

JAMES C. BRENT
Assistant District Counsel

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APPENDICES

ACRONYMS AND ABBREVIATIONS

ALARA	as low as reasonably achievable
ALI	annual limit on intake
bm3	bank cubic meters
byd3	bank cubic yards
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CF	conversion factor
cm	centimeters
D&D	decommissioning and decontamination
DACs	Derived Air Concentrations
DOE	U.S. Department of Energy
EPA	U.S. Environmental Protection Agency
ER	environmental restoration
ERDF	Environmental Restoration Disposal Facility
ft	feet
g/cm3	grams per cubic centimeter
g/yd3	grams per cubic yard
H:V	horizontal to vertical
HCR	horizontal control rod
HDPE	high density polyethylene
IDO	indefinite delivery order
ITC	International Technology Corporation
kg	kilograms
kg/L	kilogram per liter
kRad	kiloRad
lbs	pounds
LFI	Limited Field Investigations
LLDs	lower levels of detection
m	meters
m3/hr	cubic meters per hour
mg/kg	milligrams per kilogram
mg/m3	milligrams per cubic meter
MRad	megaRad
mrem/yr	millirem per year
NIOSH	National Institute for Occupational Safety and Health Standards
non-ER	non-Environmental Restoration
OSHA	Occupational Safety and Health Association
PEL	permissible air exposure limits
PNL	Pacific Northwest Laboratory
RCRA	Resource Conservation and Recovery Act
rem	roentgen equivalent man
rem/hr	rem per hour
rem/yr	rem per year
ROD	Record of Decision
TOC	total organic carbon
TRU	transuranic
TSCA	Toxic Substance Control Act
TSS	total suspended solids
USACE	U.S. Army Corps of Engineers
UTLs	upper threshold limits
VF	volatilization factor
VMC	volumetric moisture content

ACRONYMS AND ABBREVIATIONS (Continued)

VSR	vertical safety rod
WAC	Washington Administrative Code
WHC	Westinghouse Hanford Company
WIDS	Waste Information Data System
μg/kg	micrograms per kilogram
μg/L	micrograms per liter

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The proposed concept for the ERDF calls for burial of environmental restoration (ER) derived waste in a trench approximately 21.3 meters (m) (70 feet [ft]) deep with a Resource Conservation and Recovery Act (RCRA) compliant barrier. However, the specific design requirements of the waste burial trench will be determined in the final Record of Decision (ROD) to be issued by the U.S. Environmental Protection Agency (EPA) under it's Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) authority. Final closure of the waste trench will be performed under a separate contract. This barrier will be specifically designed for the ERDF site to prevent infiltration and limit access to the waste.

1.2 PURPOSE AND SCOPE

The purpose of this project is to estimate the total volume of soil and debris that will be disposed of in the ERDF, categorize the waste, evaluate potential health hazards associated with the waste, and estimate the concentrations of constituents in the ERDF leachate. This information will be utilized in the design of the ERDF facility. The information will also be used to determine appropriate operational procedures at the ERDF and to identify the necessary precautions required to ensure safe working conditions at the ERDF trench. This engineering study includes all waste sites listed in the Waste Information Data System (WIDS) database, as of November 1993, for operable units: 100-BC-1, 100-BC-2, 100-BC-3 (now 100-BC-2), 100-BC-4 (now 100-BC-2), 100-DR-1, 100-DR-2, 100-DR-3, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-IU-2, 100-KR-1, 100-KR-2, 100-KR-3, 100-NR-1, 300-FF-1, 300-FF-2, 300-FF-3, 300-FF-4, and 300-IU-1. Any additions or changes to the WIDS database after November 1993, will not be reflected in this engineering study. Table 1 lists all the waste sites associated with each of the operable units; the waste sites are summarized in Appendix A.

The activities conducted as part of this engineering study include:

- Summarizing the field investigation data listed in *Limited Field Investigations (LFI) for 100-BC-1 Operable Unit* (DOE/RL 1993b), *Limited Field Investigation for 100-DR-1 Operable Unit* (DOE/RL 1993c), *Limited Field Investigation for 100-HR-1 Operable Unit* (DOE/RL 1993d), *Phase I Remedial Investigation for 300-FF-1 Operable Unit* (DOE/RL 1993e) and data analyzed by International Technology Corporation (ITC) for operable unit 100-NR-1. The data was used to produce a summary of the contamination, including the constituents, concentrations, and the depth of the contamination for each of the sampled waste sites.

  The constituent summary tables are contained in Appendix B. The tables are divided into inorganic, organic, and radionuclide tables, which are listed respectively in sections B-1, B-2, and B-3 of Appendix B.

  This engineering study is based on limited field investigation data and sampling. As more sampling is performed on the waste sites, the data will need to be incorporated into this engineering study to update the analysis and results.

- Utilizing the field investigation and sampling data to determine if the contamination at waste sites exceeds safe working conditions and poses a potential health hazard to workers at the ERDF trench. Safe soil concentration limits were determined for all constituents found in the waste sites. The safety evaluation was based on Occupational Safety and Health Association (OSHA) dust inhalation limits for inorganic, organic, and radionuclide constituents; volatilization factors for volatile organic constituents, and external dose limits for radionuclide constituents.

1.0 INTRODUCTION

This study is one of a number of engineering studies intended to provide necessary information for the design of the proposed Environmental Restoration Disposal Facility (ERDF), at the Hanford Site. The study involved an analysis of the contamination at waste sites in the 100 Area and 300 Area operable units to estimate the types and quantities of waste to be buried at the proposed ERDF. Specifically, the objectives of this engineering study include: analyzing available field investigation data for waste sites in the 100 Area and 300 Area operable units; estimating the total excavated volume and total contaminated volume associated with the remediation of the waste sites; categorizing the contaminated waste volume as Toxic Substance Control Act (TSCA) hazardous, non-TSCA hazardous, radioactive, TSCA mixed, or non-TSCA mixed wastes; evaluating potential occupational health hazards associated with handling the contaminated waste volumes during normal operations at the proposed ERDF facility; and estimating constituent concentrations expected in the ERDF leachate to evaluate the effects of the leachate on the proposed ERDF design.

This engineering study is not intended to evaluate environmental issues associated with the ERDF (including groundwater). The study does not address occupational exposure to hazardous or radionuclide constituents due to accidents or emergency situations, or occupational hazards not related to exposure to contaminated soil and debris. This study does not set clean-up limits for remediation of the waste sites.

The U.S. Army Corps of Engineers (USACE) has tasked Montgomery Watson with preparing this engineering study under Delivery Order No. 0026, under the indefinite delivery order (IDO) contract number DACW68-92-D-0001 with the Walla Walla District. Golder Associates Inc., USACE, and Westinghouse Hanford Company (WHC) assisted Montgomery Watson in the preparation of this study.

1.1 ENVIRONMENTAL RESTORATION DISPOSAL FACILITY DESCRIPTION

The U.S. Department of Energy (DOE) has tasked the USACE, Walla Walla District with the development of a conceptual design for a proposed ERDF, burial ground 618-12, at the Hanford Site near Richland, Washington. The production of plutonium and related activities since 1943 have resulted in environmental contamination (primarily soil) on the Hanford Site. The proposed ERDF will serve as the burial facility for the majority of wastes excavated during remediation of waste management sites in the 100 Area and 300 Area operable units at the Hanford Site. The primary features of the proposed ERDF include a waste burial trench, a leachate collection, rail and tractor/trailer container handling capabilities, railroads, inventory control systems, decontamination facilities, and related support facilities, such as the operations building. A treatment facility will also be provided to handle process wastewater and leachate derived from the proposed ERDF operation.

The initial phases of the ERDF project have been designated as project W-296 and consist of the design and construction of facilities which will be used for the final management of waste resulting from remediation activities at Hanford. The trench capacity constructed under Project W-296 will accommodate waste volumes from the first five years of operation. The remainder of the facilities will be designed for the expected 30 year life of the ERDF and will be capable of accommodating the lifetime maximum anticipated volumes and associated production rates. Waste to be placed in the proposed ERDF during the first five years will primarily come from the 100 Area and 300 Area operable units.

Table 1. Operable Unit Sites.

OPERABLE UNIT	INCLUDED SITES
100-BC-1	116-B-1, 116-B-2, 116-B-3, 116-B-4, 116-B-5, 116-B-6A, 116-B-6B, 116-B-7, 116-B-9, 116-B-10, 116-B-11, 116-B-12, 116-B-13, 116-B-14, 116-B-15, 116-B-16, 116-C-1, 116-C-5, 118-B-5, 118-B-7, 118-B-8(a), 118-B-9, 118-B-10, 120-B-1, 126-B-1, 126-B-2, 126-B-3, 126-B-4, 128-B-1, 128-B-2, 128-B-3, 128-C-1, 132-B-1, 132-B-2, 132-B-3, 132-B-4, 132-B-5, 132-B-6, 132-C-2, 1607-B1, 1607-B2, 1607-B3, 1607-B4, 1607-B5, 1607-B6, 1607-B7, 600-34
100-BC-2	116-C-2A, 116-C-2B, 116-C-2C, 116-C-3, 116-C-6, 118-B-1, 118-B-2, 118-B-3, 118-B-4, 118-B-6, 118-C-1, 118-C-2, 132-C-1, 132-C-3, 1607-B8, 1607-B10, 1607-B11, 118-C-3(a), 118-C-4, 600-33, 1607-B9
100-DR-1	116-D-1A, 116-D-1B, 116-D-2 to 116-D-7, 116-D-9, 116-D-10, 116-DR-1, 116-DR-2, 116-DR-5, 116-DR-9, 120-D-1, 120-D-2, 126-D-1 to 126-D-3, 128-D-2, 130-D-1, 132-D-1, 132-D-2, 132-D-3, 628-3, 1607-D2, 1607-D4, 1607-D5, 118-D-6(a), 132-D-4, 108-D(d), 103-D(d), Sodium Dichromate Tanks(d)
100-DR-2	116-DR-3, 116-DR-4, 116-DR-6, 116-DR-7, 116-DR-8, 118-D-5, 126-DR-1, 132-DR-1, 1607-D3, 118-DR-2(a), 116-D-8, 122-DR-1, 132-DR-2
100-DR-3	118-D-1, 118-D-2, 118-D-3, 118-D-4, 128-D-1, 118-DR-1, 116-DR-10, 600-30, 1607-D1
100-FR-1	116-F-1, 116-F-2, 116-F-3, 116-F-4, 116-F-5, 116-F-6, 116-F-7, 116-F-8, 116-F-9, 116-F-10, 116-F-11, 116-F-12, 116-F-13, 116-F-14, 116-F-15, 116-F-16, 126-F-2, 128-F-2, 132-F-3, 132-F-4, 132-F-5, 132-F-6, 1607-F2, 1607-F3, 1607-F4, 1607-F5, 1607-F6, UPR-100-F-1, 118-F-8(a)
100-FR-2	118-F-1, 118-F-2, 118-F-3, 118-F-4, 118-F-5, 118-F-6, 118-F-7, 118-F-9, 120-F-1, 126-F-1, 128-F-1, 128-F-3, 600-31, 1607-F1
100-HR-1	116-H-1, 116-H-2, 116-H-3, 116-H-4, 116-H-5, 116-H-6, 116-H-7, 116-H-9, 126-H-2, 132-H-1, 132-H-3, 1607-H2, 1607-H4, 118-H-6(a), Electrical Facilities(a)
100-HR-2	118-H-1, 118-H-2, 118-H-3, 118-H-4, 118-H-5, 126-H-1, 128-H-1, 128-H-2, 128-H-3, 132-H-2, 1607-H1, 1607-H3
100-IU-2	628-1, JA Jones 2, 600-5, East White Bluffs City Landfill, White Bluffs Landfill
100-KR-1	116-K-1, 116-K-2, 116-K-3, 116-KE-4, 116-KW-3

Table 1. Operable Unit Sites (Continued).

OPERABLE UNIT	INCLUDED SITES
100-KR-2	116-KE-1, 116-KE-2, 116-KE-3, 116-KW-1, 116-KW-2, 118-K-1, 120-KE-8, 120-KW-6, 126-K-1, 130-K-1, 130-K-2, 130-KE-1, 130-KE-2, 130-KW-1, 130-KW-2, 1607-K4, 1607-K6, UPR-100-K-1, 118-KE-1(a), 118-KW-1(a), 116-KE-6A(b), 116-KE-6B(b), 116-KE-6C(b), 116-KE-6D(b), 116-KE-5, 116-KW-4, 118-KE-2, 118-KW-2, 132-KE-1, 132-KW-1
100-KR-3	120-KE-1, 120-KE-2, 120-KE-3, 120-KE-6, 120-KE-9, 120-KW-1, 120-KW-2, 120-KW-5, 120-KW-7, 128-K-1, 128-K-2, 130-K-3, 600-4, 600-29, 1607-K1, 1607-K2, 1607-K3, 1607-K5, 120-KE-4, 120-KE-5, 120-KW-3, 120-KW-4, 126-KE-2, 126-KE-3
100-NR-1	116-N-1, 116-N-2, 116-N-3, 116-N-4, 118-N-1, 120-N-1, 120-N-2, 120-N-3, 120-N-5, 120-N-6, 120-N-7, 120-N-8, 124-N-1, 124-N-2, 124-N-3, 124-N-4, 124-N-5, 124-N-6, 124-N-7, 124-N-8, 124-N-9, 124-N-10, 128-N-1, 130-N-1, 600-32, 600-35, UPR-100-N-1 to UPR-100-N-15, UPR-100-N17 to UPR-100-N26, UPR-100-N29 to UPR-100-N35, UPR-600-17, 116-N-8(b), 120-N-4(b)
300-FF-1	Ash Pits, Filter Backwash Ponds, Retired Filter Backwash Ponds, Sanitary Sewer System, 316-1, 316-2, 316-5, 322 Hazardous Waste Staging Area(d), 618-4, 618-5, 618-12, 340 Complex HWSA, 628-4, UPR-300-FF-1, UPR-300-8(c), UPR-300-9(c), UPR-300-15(c), UPR-300-19(c) to UPR-300-37(c), UPR-600-15(c)
300-FF-2	600-22, 618-1, 618-2, 618-3, 618-7, 618-8, 618-9, 618-13, Solvent Evaporator, Vitrification Test Site
300-FF-3	RLWS & 340 Complex, Retired RLWS, 300-1, 307 Retention Basin, 309-TW-1, 309-TW-2, 309-TW-3, 315 Retired Sanitary Drain Field, 316-3, 331 LSL Drain Field, 331 LSL Trench 1, 331 LSL Trench 2, 335 and 336 Retired Sanitary Drain Fields, 618-6, Biological Treatment Test Facility, Physical and Chemical Treatment Test Facilities, Thermal Treatment Test Facilities, UPR-300-1, UPR-300-2, UPR-300-4, UPR-300-5, UPR-300-7, UPR-300-10 to UPR-300-14, UPR-300-17, UPR-300-18, UPR-300-38 to UPR-300-46, Interim Filter Backwash Disposal, Powerhouse HWSA, 303-K Contamination Waste Storage, 303-M Storage Area, 303-M Uranium Oxide Facility, 304 Concretion Facility, 304 Storage Facility, 305-B Storage Facility, 309-WS-1, 309-WS-2, 311-TK-40, 311-TK-50, 313 Centrifuge, 313 Copper Remelt Operations, 313 East Side Storage Pad, 313 Filter Press, 313-TK-2, 313 Uranium Recovery Operations, 323 Tank 1 - Tank 4, 324 Sodium Removal Pilot Plant, 325 Waste Treatment Facility, 331-C HWSA, 333 East Side HWSA, 333 East Side Heat Treat Salt Storage Area, 333 Laydown HWSA, 334 Tank Farm Waste Acid Storage Tank, 334-A-TK-B, 334-A-TK-C, 350 HWSA, 3712 Uranium Scrap Storage Area, 3718-F Burn Shed, 3718-F Storage Facility, 3718-F Treatment Tank 1, 3718-F Treatment Tank 2, 3746-D Silver Recovery, 311 Methanol Tank 1 & 2(b), 313 Methanol Tank(b), 333-TK-7(b), 333-TK-11(b), 333 West Side Waste Oil Tank(b), 3713 Paint Shop HWSA(b), 3713 Sign Shop HWSA(b)

Table 1. Operable Unit Sites (Continued).

OPERABLE UNIT	INCLUDED SITES
300-FF-4	400-1, 400 Area French Drain 10A, 400 Area French Drain 1A, 400 Area French Drain 1B, 400 Area French Drain 2 - 10, 400 Area Retired French Drains, 403 French Drain, 4713-B French Drain, 4721 French Drain, 4722-B French Drain, 4722-C French Drain, 400 Area Sanitary Sewer, 400 Area Sanitary Tile Field, 400 Area Retired Septic Tanks, 400 Area Process Pond and Sewer System, 400 Area Retired Sanitary Pond, 400 Area Sand Bottom Trench, UPR-400-1, 427 HWSA, 437 MASF, 4713-B HWSA, 4722 Paint Shop HWSA, 4831 Laydown HWSA, 4843
300-IU-1	316-4, 600-1, 600-21, 600-23, UPR-600-1 to UPR-600-11, 618-10, 618-11, JA Jones 1

(a) This waste site is a reactor building; reactor buildings were not included in this engineering study.

(b) This waste site was not included in the WHC Environmental Restoration volumes, by R. Gerth (WHC 1993a). The site was not included in the additional non-Environmental Restoration volumes calculated in this report, because it was assumed to be clean, based on the information in the WIDS database.

(c) This was an unplanned release which was routed to either the process sewer system, the process trench, 316-1 & 316-2 or 218-W-3A; no volume is associated with this unplanned release.

(d) The waste site was identified in either the LFI report for operable unit 100-DR-1 or 100-HR-1, or in the *Phase I Remedial Investigation for 300-FF-1 Operable Unit* (DOE 1993f). The site is not listed in the WIDS database.

Each waste site was assigned an occupational concern rating based on the estimated amount of external radioactive contamination expected in the waste volumes.

The levels of the contamination and associated health hazards evaluated in this engineering study are based on limited sampling data from the waste sites. The conditions at the waste sites may not be completely representative of the contamination levels that will be experienced at the ERDF. If treatment options such as volume reduction are used, the resultant waste could contain higher contaminant concentrations than the original waste from the waste sites. In addition, solid waste derived from either soil washing or groundwater treatment could contain higher concentration of contaminants than encountered in the original matrix. At present, it has not been determined which, or if any, waste treatment processes will be used at the ERDF. The investigation data from the waste sites is currently the best available information to estimate the levels of contamination that will be present in the waste received at the ERDF. When waste treatment processes are better defined, the information in this study can be utilized to estimate final waste concentrations.

- Reviewing the general summary report from the WIDS database to evaluate the degree of correlation between waste sites in the 100 Area and 300 Area operable units. This review included extrapolating contamination information to those sites that have no remedial investigation data. This information was used to estimate the total volume of contaminated waste and levels of the contamination in the non-sampled waste sites. The resulting volumes and contamination levels were used throughout the analysis in this engineering study.

- Categorizing the contaminated volumes based on the individual contaminant levels listed in the field investigation data, as TSCA hazardous, non-TSCA hazardous, radioactive, TSCA mixed, and non-TSCA mixed wastes.

- Reviewing all available burial ground logs and characterizing the waste volumes, including the types of radioactive materials and rubble and the levels of radioactive contamination in the burial grounds. The material and rubble in the burial grounds have the highest levels of radioactive contamination and present the greatest risk to worker health. The review of the 105-B (118-B-1) burial ground log, *Estimates of Solid Waste Buried in the 100 Area Burial Grounds* (WHC 1987), *Summary of 100 B/C Reactor Operations and Resultant Wastes* (WHC 1993b), and the *Engineering Study for the Conveyor and Area Fill Systems for the Environmental Restoration Disposal Facility* (DOE/RL 1993) provided a clearer understanding of the nature of the waste in the burial grounds to evaluate the potential health hazards to the workers. The radionuclide constituent information listed in the WIDS database was also reviewed to obtain a better understanding of the contamination levels at non-sampled burial grounds.

- Reviewing the waste site volume estimates, including the calculations and assumptions prepared by WHC (Rich Gerth, as of October 1993) for the 100 Area and 300 Area ER waste sites (WHC 1993a) and the *100 B/C Area Remedial Activities, Pre-Design Report* (WHC 1993d) prepared by ITC. This information was utilized in preparation of volume estimates for the waste sites in the 100 Area and 300 Area operable units which were excluded from the WHC ER volume estimates. The non-Environmental Restoration (non-ER) volume estimates consist mainly of decommissioning and decontamination (D&D) waste sites and a few other miscellaneous sites. The volumes calculated for the ER and non-ER sites provide an estimate of the capacity requirement for the proposed ERDF.

- Estimating constituent concentrations in the ERDF leachate based on the field investigation data. The calculated leachate concentrations were compared with regulatory limits to determine the need for wastewater treatments. The calculated leachate concentrations were also compared to the manufacturer's high density polyethylene (HDPE) liner criteria (limits) to evaluate the possibility of liner degradation during the expected 30 year life of the ERDF. The manufacturer's liner limits were used to calculate the maximum acceptable soil concentrations, which if placed in the ERDF trench, would cause minimal degradation of the liner during the expected life of the ERDF.

Each of these activities are discussed in the following sections of this engineering study.

2.0 VOLUME ESTIMATES FOR TOTAL EXCAVATED AND TOTAL CONTAMINATED SOIL

To estimate the capacity for the ERDF, this engineering study includes volume estimates for both the total excavated volumes and the total contaminated volumes that are expected to be removed from the waste sites in the 100 Area and 300 Area operable units and placed in the ERDF. The volume estimates are based on parametric modeling. The modeling includes the design and development of representative models that are applied to each of the waste sites to determine both the total excavated and total contaminated volumes of soil to be removed from the waste sites. The parameters involved in the models include the waste site type and site dimensions. These site characteristics were obtained from the WIDS database.

The models do not incorporate any clean-up levels or clean-up regulations, but are derived from an understanding of the site characteristics and assumptions regarding the constituent behavior at the waste site. The assumptions used in developing the models were based on data obtained from field investigations and waste site sampling activities. Each model has been conservatively designed to include all of the contamination at each respective site. Although models have been designed to include all contamination at each waste site, this is not an indication that the sites will be remediated to background levels. Clean-up levels for the waste sites have not yet been established.

Sections 2.1 and 2.2 include detailed descriptions of the parametric models and the assumptions used in deriving the models. The volume estimates for the ER sites were calculated by WHC in accordance with the parametric modeling described in Section 2.1. The volume estimates for the non-ER sites are based on the models described in Section 2.2. The total excavated volumes and total contaminated volumes obtained from the model calculations are listed in Section 2.3. Section 4.0 categorizes the contaminated wastes as either TSCA hazardous, non-TSCA hazardous, radioactive, TSCA mixed, or non-TSCA mixed wastes. The potential occupational health hazards associated with the contaminated waste based on the concentration of constituents are discussed in Sections 5.0 and 6.0.

2.1 VOLUME CALCULATIONS AND ASSUMPTIONS FOR ENVIRONMENTAL RESTORATION WASTE SITES

Three parametric models were used in calculating the total excavated waste volumes and total contaminated waste volumes for each of the ER waste sites in the 100 Area and 300 Area operable units. The models were based on analysis conducted by the ITC (WHC 1993d). In their study, ITC presents estimates for minimum, maximum, and probable waste site volumes. The different estimates are designed to show the potential variability in waste volumes based on applied assumptions. Current waste site sampling and field investigation data indicate that the probable volumes are most representative of the volumes that will be removed from the waste sites. The models for the ER volume estimates in this engineering study are based on the assumptions and calculations that ITC used to obtain their probable volume estimates.

The waste sites in operable unit 300-FF-1 were not included in the ER volumes estimates prepared by WHC. The total contaminated volumes for the waste sites in this operable unit had been previously determined in the *Phase I and II Feasibility Study Report for 300-FF-1 Operable Unit* (DOE 1993e). The feasibility study did not include the total excavated volume for the operable unit. The excavated volume for operable unit 300-FF-1 was needed to complete Table 2 in Section 2.3. Table 2 is an estimate of the total excavated volume for all waste sites in the 100 Area and 300 Area operable units. The total excavated volume for the 300-FF-1 operable unit was determined by multiplying the total contaminated volume by a conversion factor. The conversion factor was the ratio of the percent difference between the total excavated volumes and total contaminated volumes for all other ER sites.

2.1.1 Environmental Restoration Waste Site Model Types

The approach utilized by WHC in preparing the ER volume estimates included developing three parametric models based on three representative waste sites, the 116-B-3 crib, the 116-B-1 trench, and the 118-B-1 burial ground. Once developed, the models from the representative waste sites were applied to each of the ER waste sites in the 100 Area and 300 Area operable units to determine the total excavated and total contaminated volume estimates for these sites.

The following briefly describes each of the models used in the ER volume estimates. Figure 1 graphically depicts each of the model types.

Type 1 Model - includes waste sites that contained disposal cells that were designed as liquid to soil disposal units, including cribs, French drains, septic systems, reverse wells, or other waste sites that exhibit similar characteristics, such as leakage from underground storage tanks or other structures. There are several common characteristics for the waste sites in this model: the sites are designed for disposal of liquid waste into the ground and each site consists of a disposal cell or cells that have waste plumes due to both lateral and vertical dispersion of the liquid wastes.

Type 2 Model - includes waste sites that were designed to store and/or transport contaminated or potentially contaminated liquid waste, including trenches.

Type 3 Model - includes waste sites that were used as burial grounds or underground disposal of solid non-aqueous wastes. The type 3 model includes burial grounds, underground storage tanks that have not leaked, or underground waste sites with demolition material. There are no waste plumes for the sites in this model type.

The volume calculations for each model type, including a model diagram and equations, are explained in detail in Appendix C.

The total excavated volumes and the total contaminated volumes for the ER sites are presented in Tables 2 and 3 respectively, in Section 2.3. Appendix D lists the excavated and contaminated volumes for each of the individual waste sites.

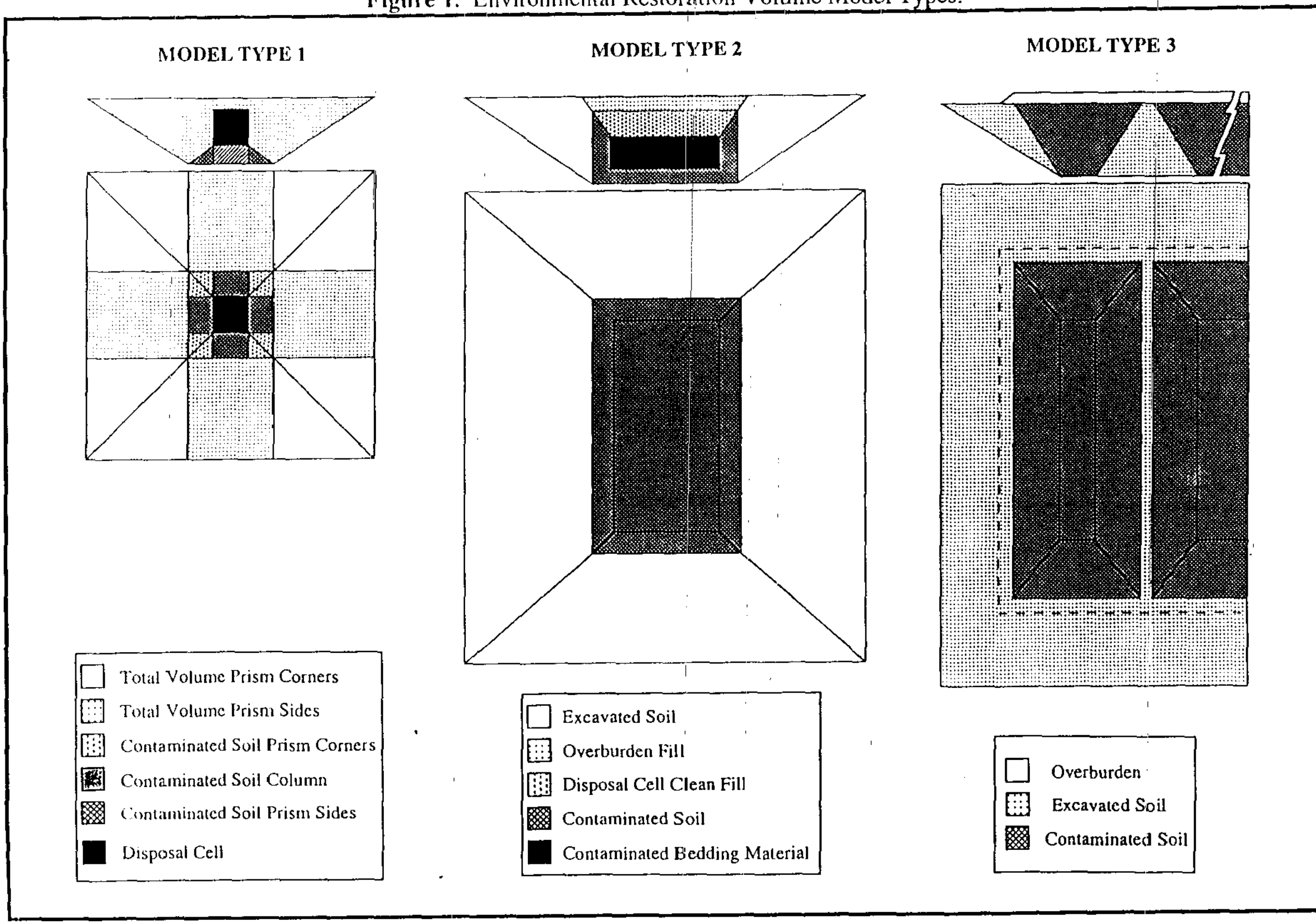
2.1.2 Assumption for Volume Calculations for Environmental Restoration Waste Sites

The volume estimates are based on the following assumptions:

General:

- All excavation slopes are 1.5 to 1.0 horizontal to vertical (H:V) unless otherwise stated.
- Contaminated waste volumes are always included with the source waste site, however, when overlap with other sites occurs, the non-contaminated volumes will be listed in the host waste site.

Figure 1. Environmental Restoration Volume Model Types.



- Waste volume estimates for pipelines were taken from either the *100 B/C Area Remedial Activities, Pre-Design Report* (WHC 1993d), *The Hanford 100 Area Long Range Decommissioning Plan* (UNI 1984), or subsequent WHC environmental engineering volume estimates.

- All volumes calculated from the parametric modeling are based on a depth measured from the ground surface level. Some of the waste sites were originally below ground and have been backfilled with clean soil (between 1.5 to 3 meters [m] [5 to 10 feet {ft}]). In most cases, no field investigation sampling was performed in the clean backfill layer. The extra soil from the backfill is factored into the models as clean (non-contaminated) waste volumes.

- Waste sites that did not have defined dimensions in either the ITC report or the WIDS database were indicated as estimated on the volume spreadsheet. The dimensions for these waste sites were estimated by comparison with other similar waste sites.

- When two sites are close enough to share some common overburden, the sites are assumed to be in parallel with their longest dimension.

- Access ramp volumes are calculated for each waste site based on the following criteria: 1) a depth of greater than or equal to 4.6 m (15 ft), and 2) a width and/or length of greater than or equal to 6.1 m (20 ft).

- All volumes are calculated in bank cubic yards.

Type 1 Model:

- Waste plumes include both lateral and vertical dispersion of liquid around the disposal cell.

- Lateral waste dispersion is assumed to extend at a slope of 1.5 to 1.0 H:V, where the vertical distance is based on the total depth of the waste site, starting at the ground surface and extending to the bottom of the waste plume beneath the disposal cell.

- The *100 B/C Area Remedial Activities, Pre-Design Report* (WHC 1993d) was used to determine the extent of waste plumes beyond the boundaries or disposal cell of each waste site. In the absence of data, it was assumed that contamination extends no more than 1.5 m (5 ft) vertically below the bottom of a liquid waste site.

- The entire volume of the disposal cells is contaminated unless otherwise stated.

Type 2 Model:

- Assumes both horizontal and vertical dispersion of the liquid waste in the soil column.

- The *100 B/C Area Remedial Activities, Pre-Design Report* (WHC 1993d) was used to determine the extent of waste plumes beyond the boundaries or disposal cell of each waste site. In the absence of data, it was assumed that contamination extends no more than 1.5 m (5 ft) vertically below the bottom of a liquid waste site. The exception is the plume in a retention basin which typically extended 10 to 11.9 m (33 to 39 ft) below the base of the basin.

- The waste sites in this model typically have sloped sides, therefore, the lateral dispersion is represented by a vertical line which originates at the highest contact point of the liquid on the edge of the unit and continues vertically down to the maximum assumed waste plume depth.
- Waste sites are assumed to be either completely backfilled with clean fill or left completely open.
- Unless stated otherwise, it is assumed that these units were never filled with liquid to more than two thirds capacity.
- For those waste sites which were completely filled or overflowed, the model calculations were adjusted to reflect the waste area and depth changes.

Type 3 Model:

- The total volume of the disposal cell is contaminated.
- No waste volumes exist beyond the waste unit or excavation boundaries.
- Burial grounds did not leak contamination into the surrounding soil.
- Burial grounds are covered with 1.5 m (5 ft) of clean soil.
- Burial grounds are assumed to be completely filled.
- If the number of units in a waste site was not available, the number of units was estimated based on the number of sites that would fit within the waste site boundaries.
- The model allows for additional overburden caused by mounds over the waste sites. If a mound does not exist, the thickness value in the overburden calculations is set to zero and a mound volume is not calculated.

2.2 VOLUME CALCULATIONS AND ASSUMPTIONS FOR NON-ENVIRONMENTAL RESTORATION WASTE SITES

The WHC volume estimates included most ER waste sites in the 100 Area and 300 Area operable units. This section involves the calculation of volume estimates for the waste sites in the 100 Area and 300 Area operable units which were excluded from the WHC ER volume estimates. The excluded waste sites mainly consist of D&D sites, including test and support facilities and staging areas. There are also a few other miscellaneous sites, such as tanks and unplanned releases, that were included in the non-ER volume estimates.

The total excavated volumes and the total contaminated waste volumes for the non-ER sites are based on simplified versions of the models used by WHC for the ER waste sites. Much of the waste site information for the non-ER sites, including the site dimensions, is not currently listed in the WIDS database. For the non-ER waste sites with missing information, the dimensions were estimated from the limited information in the WIDS database.

2.2.1 Non-Environmental Restoration Waste Site Model Types

The volume estimates for the non-ER sites are based on the following two simplified models. Figure 2 graphically depicts each of the models.

Type 1 Model - includes all waste sites involved with liquid waste storage or handling and sites which presented a potential for leakage to the soil, including staging areas for liquid waste, test facilities involved with handling or sampling liquid waste, unplanned releases of liquid waste to the soil, or any outside facility which presented a possibility of washing waste to the soil.

Type 2 Model - includes all waste sites involved with solid waste storage or handling that presented little or no potential for releases to the soil, including test and support facilities for solid waste, burning pits, burial grounds, and covered outside storage and staging areas.

The volume calculations for each model type, including model diagram and equations, are explained in detail in Appendix E. A summary of the total excavated volumes and the total contaminated volumes is presented in Tables 2 and 3, respectively, in Section 2.3. Appendix F lists the excavated and contaminated volumes for each of the individual waste sites.

2.2.2 Assumptions for Volume Calculations for Non-Environmental Restoration Waste Sites

The volume estimates are based on the following assumptions:

General:

- The excavation area for the waste site was determined by a 1.5 to 1.0 H:V excavation slope, where the vertical distance was based on the total depth of the waste site.
- The dimensions for the waste sites that did not have defined dimensions in the WIDS database were determined by comparison with other similar sites. The volume calculation spreadsheet in Appendix F indicates the sites where dimension estimates were necessary.
- All excavated volumes are based on cubic shapes. The dimensions of the cubes are the maximum calculated depths, lengths, and widths of the waste sites and plume. These volumes are very conservative estimates.
- All volumes calculated from the parametric modeling are based on a depth measured from the ground surface level. Some of the waste sites were originally below ground and have been backfilled with clean soil (between 1.5 to 3 m [5 to 10 ft]). In most cases, no field investigation sampling was performed in the clean backfill layer. The extra soil from the backfill is factored into the models as clean (non-contaminated) waste volumes.
- All volumes are calculated in bank cubic yards.

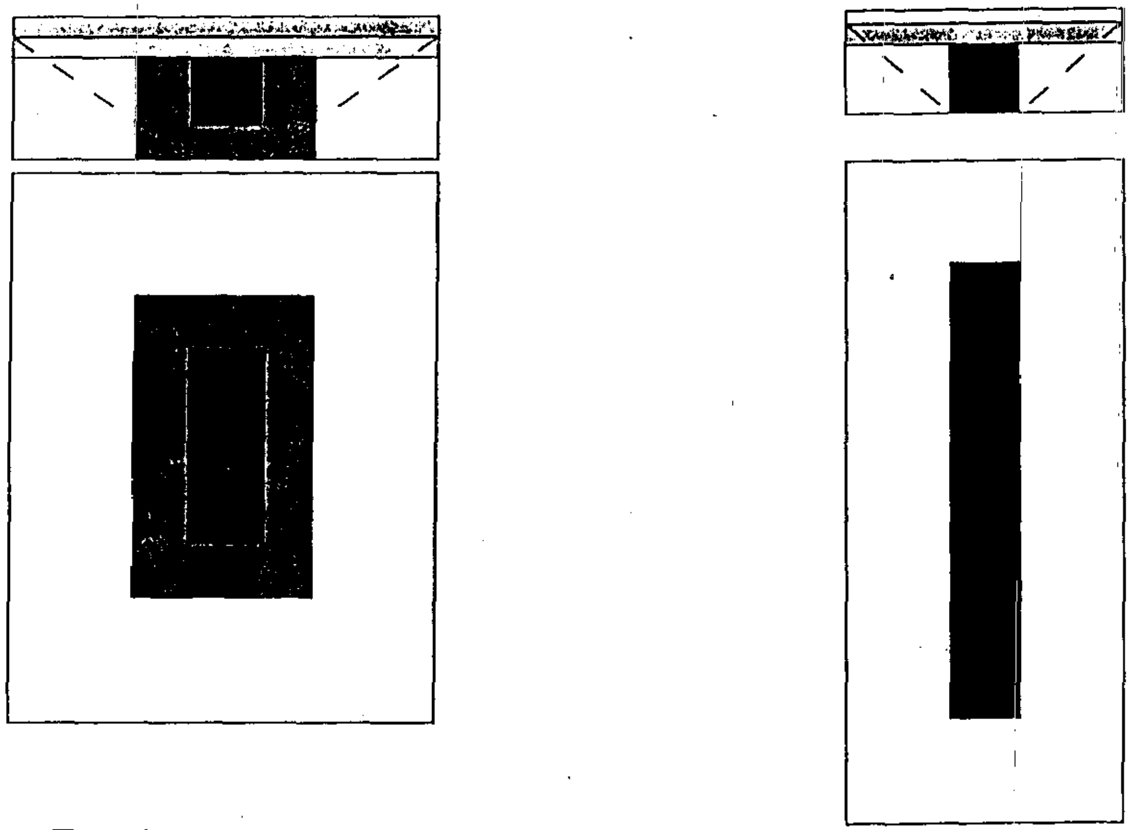
Type 1 Model:

- The entire volume of the disposal cells is contaminated unless otherwise stated.
- Waste plumes include both lateral and vertical dispersion of the liquid waste.

Figure 2. Non-Environmental Restoration Volume Model Types.

MODEL TYPE 1

MODEL TYPE 2



- For solid waste staging areas or facilities which presented a possibility of leakage to the soil from rain or wash down, the contamination was assumed to extend no more then 1 m (3 ft) below the waste site. For all other sites, it was assumed that contamination extends no more than 1.5 m (5 ft) vertically below the bottom of the waste site.

- The assumed vertical dispersion depth of the liquid waste at a waste site is included in the total depth of the waste site which is used in the 1.5 to 1.0 H:V excavation slope for determining the total excavation area of the waste site.

Type 2 Model:

- Burial grounds or pits are entirely filled.

- The waste volumes are assumed not to extend beyond the waste unit or excavation boundaries.

- For buildings, the demolished volume was based on the width, length, and below-grade depth of the building. It was assumed that this volume would be representative of the compacted demolished building volume.

- It is assumed that the total volume of the burial ground, pits, or demolished building volume is contaminated. This will be an overestimate for demolished buildings.

- The waste sites did not release contamination into the surrounding soil.

2.3 TOTAL VOLUMES IN THE 100 AND 300 AREA OPERABLE UNITS

Tables 2 and 3 summarize, by operable unit, the excavated volumes and contaminated volumes for the waste sites listed in Table 1. The volumes were determined with the volume calculations described in Sections 2.1 and 2.2. All waste volumes in this engineering study are listed as bank cubic volumes.

Any waste site not listed in the November 1993 WIDS database for the operable units in this study was not included in the volume estimates. All reactor buildings in the 100 Area have been excluded from this investigation. Any non-ER waste site that is identified as clean in the WIDS database was not included in the volume estimates; these sites are identified in Table 1. The volume estimates do not include expected grout and clean cover material that will be added during normal operations at the proposed ERDF. The bank volumes do not account for any swelling in the waste volumes. In addition, the miscellaneous waste material and equipment that may be disposed of in the trench during operations at the proposed ERDF, were not included.

The volume estimates in Tables 2 and 3 may vary if the true conditions at the waste sites do not match the assumed conditions in the models. There are many waste site volumes that were estimated due to missing information in the WIDS database. These sites will require further investigation to determine the true site characteristics, including length, width, and depth.

There is also an uncertainty with respect to the volume of waste from the remediated waste sites that will be disposed of in the proposed ERDF trench. Tables 2 and 3 give an estimate of the amount of waste expected to be derived from remediation of the waste sites in the 100 Area and 300 Area operable units. The volumes in Tables 2 and 3 also provide an initial estimate of the capacity requirements for the proposed ERDF trench.

Table 2. Total Excavated Volume Estimates.

Operable Units	Total Volumes (a) ER	Total Volumes (a) Non-ER	Total Pipeline Volumes	TOTAL
100-BC				
bft^3 (b)	82,588,391	4,724,925	15,882,662	103,195,978
byd^3 (b)	3,058,829	174,997	588,247	3,822,073
bm^3 (b)	2,338,655	133,796	449,749	2,922,201
100-DR				
bft^3	78,579,726	1,218,739	45,276,136	125,074,601
byd^3	2,910,360	45,138	1,676,894	4,632,393
bm^3	2,225,142	34,511	1,282,084	3,541,737
100-FR				
bft^3	45,578,578	-	13,314,213	58,892,791
byd^3	1,688,095	-	493,119	2,181,214
bm^3	1,290,649	-	377,019	1,667,667
100-HR				
bft^3	43,832,244	351,125	14,408,496	58,591,865
byd^3	1,623,416	13,005	533,648	2,170,069
bm^3	1,241,198	9,943	408,005	1,659,146
100-KR				
bft^3	115,805,767	969,504	51,702,975	168,478,246
byd^3	4,289,102	35,908	1,914,925	6,239,935
bm^3	3,279,272	27,453	1,464,073	4,770,798
100-NR				
bft^3	19,595,056	-	11,835,585	31,430,641
byd^3	725,743	-	438,355	1,164,098
bm^3	554,873	-	335,148	890,021
300-FF				
bft^3	76,344,455 (c)	31,714,681	(d)	108,059,136
byd^3	2,827,572 (c)	1,174,618	(d)	4,002,190
bm^3	2,161,846 (c)	898,065	(d)	3,059,911
Total, bft^3	**462,324,217**	**38,978,974**	**152,420,067**	**653,723,258**
Total, byd^3	**17,123,119**	**1,443,666**	**5,645,188**	**24,211,973**
Total, bm^3	**13,091,635**	**1,103,768**	**4,316,079**	**18,511,482**

(a) The ER waste site volumes combine several columns in the WHC ER volume estimate spreadsheets (Appendix D), including, contaminated waste volumes, other waste volumes, total non-contaminated soil, and demolition waste volumes. The volumes for the non-ER sites are the volume estimates from the total volume column in the non-ER volume estimate spreadsheets (Appendix F).

(b) bft^3: bank cubic feet, byd^3: bank cubic yards, bm^3: bank cubic meters

(c) The 300-FF volumes include unplanned releases (UPRs) from operable unit 300-IU-1 that were not included in the WHC ER volumes. The UPRs are associated with the burial grounds that are included in the WHC ER volumes and were therefore included in the ER volume estimates. The volumes for the UPRs were calculated with the non-ER Volume models and are included in the ER volume estimates in Appendix D.

(d) Pipeline volumes were not calculated for the 300 Area operable unit.

Table 3. Contaminated Volume Estimates.

Operable Unit	Total Volumes (a) ER	Total Volumes (a) Non-ER	Total Pipeline Volumes	TOTAL
100-BC				
bft^3 (b)	43,604,634	3,631,634	3,177,333	50,413,601
byd^3 (b)	1,614,986	134,505	117,679	1,867,170
bm^3 (b)	1,234,752	102,837	89,973	1,427,562
100-DR				
bft^3	41,198,137	399,733	10,961,379	52,559,249
byd^3	1,525,857	14,805	405,977	1,946,639
bm^3	1,166,608	11,319	310,393	1,488,320
100-FR				
bft^3	21,872,315	-	3,434,940	25,307,255
byd^3	810,086	-	127,220	937,306
bm^3	619,358	-	97,267	716,626
100-HR				
bft^3	24,350,294	312,500	3,503,952	28,166,746
byd^3	901,863	11,574	129,776	1,043,213
bm^3	689,527	8,849	99,221	797,598
100-KR				
bft^3	61,524,216	142,262	13,175,919	74,842,397
byd^3	2,278,675	5,269	487,997	2,771,941
bm^3	1,742,181	4,028	373,102	2,119,312
100-NR				
bft^3	9,068,843	-	3,359,988	12,428,831
byd^3	335,883	-	124,444	460,327
bm^3	256,802	-	95,145	351,947
300-FF				
bft^3	36,199,281 (c)	21,153,669	(d)	57,352,950
byd^3	1,340,714 (c)	783,469	(d)	2,124,183
bm^3	1,025,055 (c)	599,008	(d)	1,624,063
Total, bft^3	**237,817,720**	**25,639,798**	**37,613,511**	**301,071,029**
Total, byd^3	**8,808,064**	**938,048**	**1,393,093**	**11,150,779**
Total, bm^3	**6,734,284**	**717,193**	**1,065,102**	**8,525,428**

(a) The ER waste site volumes include only the contaminated volumes from the WHC ER volume estimates (Appendix D). The volumes for the non-ER sites are the contaminated volumes from the contaminated volume column in the non-ER volume estimate spreadsheets (Appendix F).

(b) bft^3: bank cubic feet, byd^3: bank cubic yards, bm^3: bank cubic meters

(c) The 300-FF volumes include unplanned releases (UPRs) from operable unit 300-IU-1 that were not included in the WHC ER volumes. The UPRs are associated with the burial grounds that are included in the WHC ER volumes and were therefore included in the ER volume estimates. The volumes for the UPRs were calculated with the non-ER volume models and are included in the ER volume estimates in Appendix D.

(d) Pipeline volumes were not calculated for the 300 Area operable unit.

There are several factors that must be considered when estimating the amount of waste that will be placed in the proposed ERDF trench:

- A large percentage of the total excavated volume estimate includes clean soil which will most likely be used as backfill at the waste sites.
- The waste acceptance criteria for the proposed ERDF has not yet been established. Some of the waste contained in the burial grounds may not meet the waste acceptance criteria.
- The clean-up levels have not yet been set for the remediation of the waste sites. The clean-up levels may have a significant impact on the amount of waste derived from each waste site.
- Pretreatment options, such as volume reduction via physical separation or soil washing, may substantially reduce the volumes placed in the proposed ERDF. Volume reduction will however, cause an increase in the concentrations of the constituents placed in the ERDF. Treatment such as grouting, may increase the volumes.
- There is a potential for placement of 200 Area waste and contaminated soil in the ERDF trench.

3.0 ANALOGOUS SITES

Information from the field investigation and sampling for operable units 100-BC-1, 100-DR-1, 100-HR-1, 100-NR-1 and 300-FF-1 were reviewed to estimate the types and concentrations of the constituents that are present in the sampled waste sites. A database was developed to show the concentration of contaminates at incremental depths for each of the sampled waste sites.

Sampling was performed on a representative selection of waste sites in the 100 Area and 300 Area operable units. To obtain information on non-sampled sites, each waste site was evaluated based on site type, the use of the site, and the operational years, to determine correlations between non-sampled waste sites and sampled waste sites. All waste site information used in determining analogies was obtained from the WIDS general summary report. The field investigation data from the sampled reference sites were extrapolated to all analogous sites to estimate the probable contamination at the non-sampled waste sites. Appendix G lists the sampled waste sites and all sites that are analogous to these sites.

Waste site constituent information was also obtained from the WIDS database and burial ground log for 105-B (118-B-1) for non-sampled burial grounds. This information was used to determine likely constituent contamination for non-sampled burial grounds and analogies for the burial grounds.

There were 33 sites or groups of sites with sample data that were used as reference sites. When a non-sampled waste site was considered analogous to a group of sites, the sampled waste site with the highest radionuclide contamination levels and/or with the greatest percentage of contaminated volume was used in the analysis for the non-sampled site. Many sites that had no true analogy were considered to be conservatively analogous to a waste site or sites based on similar radionuclide constituents listed in WIDS, similar operations or waste streams, or similar types of sites. The following is a list of the reference sites and a brief summary of the typical sites that were considered analogous:

Sampled Waste Site Analogies:

- All septic tanks were assumed to be analogous to sites 1607-H2 and 1607-H4.
- Sites 116-B-1, 116-DR-1, 116-DR-2, and 116-H-1 were considered analogous to liquid waste disposal trenches that received high activity effluent produced by fuel element failures. These sites were also used as analogies when processes described in WIDS could have produced similar contamination, even though anticipated levels would be lower.
- Pluto cribs receiving contaminated high activity effluent from process tubes contaminated by fuel element failures or other sites receiving similar liquid wastes were considered to be analogous to sites 116-B-3 and 116-D-2. Site dimensions of analogous sites were similar to the 3 m by 3 m by 3 m (10 ft by 10 ft by 10 ft) dimensions of the Pluto cribs.
- Larger cribs and sites that received low-level liquid waste were assumed to be analogous to site 116-B-5. Much of the contamination in this waste site is tritium. This site was also used as an analogy for sites of different construction that had tritium bearing wastes discharged to them.

- All electrical facilities were considered analogous to the sampled electrical facility in operable unit 100-HR-1.

- All trenches and associated sites were considered to be analogous to sites 116-B-2, 116-D-1A, and 116-D-1B. Since there are some disparities in the contaminants found in site 116-B-2 to those found in sites 116-D-1A and 116-D-1B, the highest levels found in any of these were used for analogous sites.

- All retention basins associated with reactor operations were assumed to be analogous to sites 116-C-5, 116-D-7, 116-DR-9, and 116-H-7. Sludge samples were not obtained from sites 116-D-7, 116-DR-9, and 116-H-7; therefore, an exact comparison of the sludge constituent concentrations could not be performed. The radionuclide constituents found beneath sites 116-D-7 and 116-H-7 are similar. The WIDS database does not mention the presence of sludge for many of the sites assumed to be analogous. Since the sludges were highly contaminated, the analogies may be over-conservative if sludge is not present.

- Sites 116-D-3 and 116-D-6 were assumed to be analogous to French drains with potential low-level radionuclide contamination.

- Site 116-H-3 received wastes generated during decontamination of fuel element spacers. This site was considered to be analogous to sites receiving similar waste streams.

- Site 132-D-3 is an effluent pumping station and was assumed to be analogous to all other effluent pumping stations that were potentially contaminated with radionuclides.

- Sites that are associated with exhaust air infiltration, seal pits, or received waste from them are assumed to be analogous to sites 116-D-9 and 116-H-9.

- Sites that received wastes generated during reactor shutdown and standby periods are considered to be analogous to site 116-H-2. This site operated from 1953 to 1965 and received minimal contamination.

- Site 116-N-1 was a liquid waste disposal facility. Sites that received radioactive water containing activation and fission products and/or small quantities of corrosive liquids and laboratory chemicals are assumed to be analogous to site 116-N-1.

- Site 116-N-2 was a collection tank for N-Reactor primary piping decontamination waste.

- Unplanned releases UPR-100-N-4 and UPR-100-N-8 were sump overflows of radioactive water to the soil. Similar spills were considered analogous.

- Unplanned releases UPR-100-N-9 and UPR-100-N-14 were drain line leaks of contaminated water. Similar line leaks were considered analogous.

- Site 120-N-1 is used as an analogy for sites in the 100 Area that received corrosive waste. This site is a percolation pond, but analogous sites vary in site type.

- Sites 116-D-5 and 116-DR-5 are assumed to be analogous to all outfall structures and other similar sites that received process effluent from retention basins. Sites that received similar waste streams but were less contaminated, were assumed to be analogous to sites 116-D-5 and 116-DR-5.

- Site 130-D-1 is an underground storage tank that previously stored leaded gasoline. This site is assumed to be analogous to all other gasoline tanks and unplanned releases. There is no radionuclide contamination associated with these sites.

- All sodium dichromate tanks are assumed to be analogous to the sampled sodium dichromate tank in operable unit 100-DR-1.

- All oil spills and oil storage tanks are assumed to be analogous to site UPR-100-N-17. There is no radionuclide contamination associated with these sites.

- All standing or demolished structures that could contain low concentrations of mixed waste are considered to be analogous to site 108-D. This site is a demolished office building that contained a decontamination repair shop for contaminated reactor process tube replacement equipment. The use of this building as an analogy may be non-conservative for some facilities.

- The 300 Area sanitary sewer system is used as an analogy for sites that received non-radioactive sanitary waste water, non-radioactive janitorial wastewater, or non-radioactive air conditioner cooling water.

- Sites 316-1 (South Process Pond) or 316-2 (North Process Pond) are considered analogous to sites that received cooling water and low-level liquid waste.

- The 300 Area Process Trenches (site 316-5) is assumed to be analogous to other disposal trenches in the 300 Area and facilities that discharged into the trench.

- All ash pits are assumed to be analogous to the 300 Area Ash Pit.

- The Filter Backwash Ponds in the 300 Area was assumed analogous to sites that received non-hazardous filter backwash water.

- Some of the burial grounds in the 300 Area are considered to be analogous to the 618-5 burial ground. This burial ground has minimal radionuclide contamination.

Non-sampled Burial Ground Analogies:

- There are six sites that are estimated to have similar radioactive constituents to site 118-B-1. These sites typically consisted of multiple trenches and were highly contaminated. The constituents that are listed in the WIDS database to be present include Carbon-14, Cobalt-60, Cesium-137, Europium-152, Europium-154, Hydrogen-3, Nickel-63, and Strontium-90.

- Site 118-F-4 contains silica gel removed from gel tower in one of the 115-F dryer rooms. This site contains Carbon-14 and Hydrogen-3.

- Site 118-F-6 is assumed to be analogous to site 118-F-5. Both sites contained approximately 10 Curies (Ci) of Strontium-90 and 118-F-5 also was listed as containing 0.3 Ci of Plutonium-239. The burial grounds are biology burial grounds and not related to reactor operations.

- Site 118-K-1 is anticipated to contain the largest number of radioactive constituents. This site is listed in WIDS as containing Carbon-14, Cobalt-60, Cesium-137, Europium-152, Europium-154, Europium-155, Hydrogen-3, Plutonium-239, Plutonium-240, Strontium-90, Uranium-235, and Uranium-238.

- Site 118-B-5 was used for highly contaminated wastes, such as old thimbles and step plugs, that were removed from 105-B Building for the Ball 3X work in 1953. In the WIDS database, the contamination was estimated as 1 Ci of Cobalt-60 decayed through April 1, 1986. This equates to approximately 0.4 Ci of Cobalt-60 decayed though April 1, 1994. All sites that were estimated to have approximately 1 Ci of Cobalt-60 in the WIDS database were assumed to be analogous to this site. All other burial ground sites that had little information provided and were listed as low-level or low-level-mixed waste were considered to be analogous to this site. Reactor exhaust stacks were also considered analogous to this reference site.

Selected sites throughout the 100 Area and 300 Area operable units were determined not to have analogous sites. These were evaluated based on information in the WIDS database to determine the appropriate concern ratings.

4.0 WASTE CATEGORIES AND VOLUMES

This section includes a categorization of the contaminated waste volumes in the waste sites for operable units 100-BC-1, 100-DR-1, 100-HR-1, 100-NR-1, and 300-FF-1. The volumes were divided into five categories: non-TSCA hazardous, TSCA hazardous, non-TSCA mixed, TSCA mixed, and radioactive. The analysis was based on field investigation and sample data from the reports listed in Section 1.0.

Waste sites with no field investigation data were categorized with the data from the sampled waste sites (reference sites) that were considered analogous. The reference sites and their respective analogies are discussed in Section 3.0. The analogous reference site(s) for each non-sampled waste site is listed in Appendix G.

The volumes in this section are expected to be very conservative. The volumes for each category were determined by calculating the amount of contaminated volume in each waste site that was over cut-off limits. Cut-off limits were considered to be synonymous to risk based clean-up levels and background based clean-up levels. This is not an indication that the sites will necessarily be remediated to background levels. Clean-up levels for the waste sites have not yet been established; as clean-up levels are determined, the waste volume estimates may vary substantially.

4.1 CUT-OFF LIMITS

The first step in the analysis of the contaminated volumes involved determining cut-off limits for defining the wastes. The cut-off limits for inorganic, organic, and radioactive constituents were used to define hazardous and radioactive wastes. Cut-off limits for inorganic and organic constituents were used to determine the hazardous wastes, and cut-off limits for the radionuclide constituents were used to determine the radioactive wastes. Volumes containing both hazardous and radioactive constituents at levels exceeding cut-off limits were classified as mixed waste. Clean-up levels have not currently been established by DOE or state regulators; however, the cut-off limits in this study have been used in the past or are used by other agencies as clean-up levels. As clean-up levels are established for Hanford Site waste sites, the waste volume estimates may vary substantially.

For inorganic and organic constituents, clean-up levels for residential areas listed in the Washington Administrative Code (WAC), *Model Toxics Control Act--Cleanup*, WAC-173-340-740 were used as cut-off limits, when available. Many of the organic and inorganic cut-off limits used in this study, were based on EPA Region 3 Toxicity Equivalence Factors. These toxicity equivalence factors have been adopted by Region 10 and are anticipated to be a conservative estimate of clean-up levels that will be established for remediation activities at the Hanford Site. When EPA Region 3 values were not available, limits were based on EPA Region 2 Toxicity Equivalence Factors. When risk based clean-up levels for inorganic constituents, were lower than background levels, the 95 percent upper threshold limits (UTLs) for Hanford soil background levels were used as the cut-off limit. The 95 percent UTLs are defined in the *Hanford Site Background: Part 1, Soil Background for Nonradioactive Analytes* (DOE 1993). Soil constituents that are typically in high concentrations at background levels and are essential nutrients to humans were not evaluated. These constituents will not normally be the controlling contaminant in determining whether a material is a hazardous waste.

Since there are no past clean-up levels that have been established for radionuclide constituents in Hanford soils, the cut-off limits were based on the mean background level plus three standard deviations. This approach has been used in the past for Washington state radiation permitting (WDH 1993). The background levels were obtained from the preliminary *Soil Background for Radioactive Analytes* (DOE Draft, Not Yet Released). When values were not available for background or the background limits were zero, the Washington Department of Health lower levels of detection (LLDs) were used. The LLDs were obtained from the *Annual Report of the Environmental Radiation Program of the Department of Health* (WDH 1991). If values were not available from either of the above sources, the radionuclide concentration cut-off limits were assumed to be synonymous with the radionuclide concentration at the Vernita site (WHC 1993c). These values have been used in past feasibility studies as background levels. All of the cut-off limits for radionuclide constituents were based on preliminary or draft data and may change when final documents are published.

4.2 NON-BURIAL GROUND WASTE VOLUMES

Non-burial ground waste volumes include both contaminated soil and sludge from non-burial ground waste sites. The soil and sludge volumes were categorized into non-TSCA hazardous, TSCA hazardous, non-TSCA mixed, TSCA mixed, and radioactive waste by determining the percentage of the volume over the cut-off limit. The volumes in each category are summarized in Table 4. The analysis used in estimating the volumes for the non-burial ground waste sites is discussed in this section.

The field investigation data in Appendix B was used in calculating the percentage of the volume over the cut-off limit. The appendix lists the field investigation sample data at intervals of 2.5 ft to 10.0 ft. Each interval lists a sampled value for the constituents present at the waste sites. When more than one sample was taken in an interval, the high and low values of the constituents are listed in the interval. For each waste site, the total number of sampled intervals and the total number of intervals with data over the cut-off limits were counted. The tables in Appendix H-1 list this information for each reference site or each group of reference sites for the non-burial ground soil sites. The table in Appendix H-2 lists this information for the reference sites with sludge. For groups of waste sites, the total intervals and intervals over the cut-off limits are a summation of each of the waste sites in the reference group. All intervals were weighted to account for the variation in sizes.

The percentage of waste volume over the cut-off limits was determined by dividing the number of sampled intervals that contained data over the cut-off limits by the total number of sampled intervals. The tables in Appendix H list the percentage of the waste volumes that are over the cut-off limits for each constituent in each reference site or group of reference sites.

The volumes listed at the top of the tables in Appendix H include the sampled site(s) and all the non-sampled sites that are considered to be analogous to the sampled site(s) (as discussed in Section 3.0). The volume total in the appendix was multiplied by the respective percentages for each constituent to determine the total contaminated volume expected to contain each constituent. Table 5 lists the total volume, by operable unit, of waste over the cut-off limits for each of the constituents in the soil volumes from the non-burial ground waste sites. Table 6 similarly lists the total volume for each constituent for the sludge volumes in the non-burial ground waste sites.

The volumes in Tables 5 and 6 for each constituent cannot be summed to give an overall volume. Many of the individual constituent volumes are from the same sampled intervals. These tables simply provide an indication of the types of constituents that will be present in the categorized waste. Total volumes were estimated by comparing sample intervals and summing the volumes.

Table 4. Volume Summary for Waste Categories.

Categories	Volume Over Limit 100-BC (byd^3)	Volume Over Limit 100-DR (byd^3)	Volume Over Limit 100-FR (byd^3)	Volume Over Limit 100-HR (byd^3)	Volume Over Limit 100-IU (byd^3)	Volume Over Limit 100-KR (byd^3)	Volume Over Limit 100-NR (byd^3)	Volume Over Limit 300-FF (byd^3)	Total Volume Over Limit (byd^3)
Soil Summary for Non-Burial Ground Waste Sites									
Total TSCA Mixed Waste	0	5,142	0	0	0	0	0	284,694	289,836
Total Non-TSCA Mixed Waste	152,022	118,948	64,753	74,112	0	208,045	43,888	85,169	746,937
Total Mixed Waste	152,022	124,090	64,753	74,112	0	208,045	43,888	369,863	1,036,773
Total Non-Radioactive TSCA Hazardous Waste	0	0	0	0	0	0	0	0	0
Total Non-Radioactive Hazardous Waste (Non-TSCA)	0	3,912	3,057	0	7,506	77,161	256,233	68,815	416,684
Total Hazardous Waste (Non-Radioactive)	0	3,912	3,057	0	7,506	77,161	256,233	68,815	416,684
Total Radioactive Waste (Non-Hazardous)	910,002	770,060	355,204	496,040	0	1,416,873	94,179	984,499	5,026,857
Sludge Summary for Non-Burial Ground Waste Sites									
Total TSCA Mixed Waste	0	0	0	0	0	0	0	0	0
Total Non-TSCA Mixed Waste	31,312	27,800	11,725	18,764	0	49,656	0	0	139,257
Total Mixed Waste	31,312	27,800	11,725	18,764	0	49,656	0	0	139,257
Total Non-Radioactive TSCA Hazardous Waste	0	0	0	0	0	0	0	0	0
Total Non-Radioactive Hazardous Waste (Non-TSCA)	0	0	0	0	0	0	0	0	0
Total Hazardous Waste (Non-Radioactive)	0	0	0	0	0	0	0	0	0
Total Radioactive Waste (Non-Hazardous)	0	0	0	0	0	0	0	0	0

Table 4. Volume Summary for Waste Categories (Continued).

Categories	Volume Over Limit 100-BC (byd³)	Volume Over Limit 100-DR (byd³)	Volume Over Limit 100-FR (byd³)	Volume Over Limit 100-HR (byd³)	Volume Over Limit 100-IU (byd³)	Volume Over Limit 100-KR (byd³)	Volume Over Limit 100-NR (byd³)	Volume Over Limit 300-FF (byd³)	Total Volume Over Limit (byd³)
Rubble, Debris, and Soil Summary for Burial Ground Waste Sites									
Total TSCA Mixed Waste	0	0	0	0	0	0	0	41,800	41,800
Total Non-TSCA Mixed Waste	0	0	0	0	0	0	0	116,017	116,017
Total Mixed Waste	0	0	0	0	0	0	0	157,817	157,817
Total Non-Radioactive TSCA Hazardous Waste	0	0	0	0	0	0	0	0	0
Total Non-Radioactive Hazardous Waste (Non-TSCA)	0	0	0	0	0	0	0	0	0
Total Hazardous Waste (Non-Radioactive)	0	0	0	0	0	0	0	0	0
Total Radioactive Waste (Non-Hazardous)	522,662	572,267	218,350	145,484	5,994	260,253	0	482,588	2,207,598

Table 5. Summary by Consitutent for Non-Burial Ground Waste Sites with Soil.

Constituent	Cut-off Limit	Volume Over Limit 100-BC (byd^3)	Volume Over Limit 100-DR (byd^3)	Volume Over Limit 100-FR (byd^3)	Volume Over Limit 100-HR (byd^3)	Volume Over Limit 100-IU (byd^3)	Volume Over Limit 100-KR (byd^3)	Volume Over Limit 100-NR (byd^3)	Volume Over Limit 300-FF (byd^3)	Total Volume Over Limit (byd^3)
Inorganic	**(mg/kg)**									
Aluminum	230,000(a)	0	0	0	0	0	0	0	0	0
Antimony	31(a)	0	0	0	0	0	0	0	0	0
Arsenic	8.92(b)	133,766	110,329	54,539	71,898	0	192,058	21,944	19,668	604,202
Barium	5,500(a)	0	0	0	0	0	0	0	0	0
Beryllium	1.77(b)	0	0	0	0	0	0	0	0	0
Cadmium	2(c)	5,832	5,856	5,532	1,425	0	717	22,618	81,810	123,788
Chromium	100(c)	12,792	10,084	8,682	1,815	0	4,599	21,944	170,245	230,161
Cobalt	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Copper	2,900(a)	0	5,090	0	0	0	0	0	141,496	146,586
Iron	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Lead	250(c)	54,898	49,920	24,359	30,825	0	78,559	21,944	84,804	345,309
Magnesium	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Manganese	10,900(e)	0	0	0	0	0	0	0	0	0
Mercury	1.25(b)	9,492	9,037	5,532	1,425	0	717	21,944	170,245	218,391
Nickel	1,600(a)	0	636	0	0	0	0	17,687	17,687	36,010
Potassium	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Selenium	390(a)	0	0	0	0	0	0	0	0	0
Silver	390(a)	0	636	0	0	0	0	17,687	17,687	36,010
Sodium	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Sulfate	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Thallium	5.5(a)	0	0	0	0	0	0	0	0	0
Vanadium	550(a)	0	0	0	0	0	0	0	0	0
Zinc	23,000(a)	0	0	0	0	0	0	0	0	0
Organic	**(mg/kg)**									
Acetone	7,800(a)	0	0	0	0	0	0	0	0	0
Benzene	0.5(c)	0	0	0	0	0	0	0	0	0
2-Butanone	47,000(a)	0	0	0	0	0	0	0	0	0
Carbondisulfide	7,800(a)	0	0	0	0	0	0	0	0	0
1,2-Dichloroethene (total)	700(a)	0	0	0	0	0	0	0	0	0
4-Methyl-2-Pentanone	3,900(a)	0	0	0	0	0	0	0	0	0
Methylene Chloride	0.5(c)	0	0	0	0	0	0	0	0	0
Tetrachloroethene	0.5(c)	0	0	0	0	0	0	0	0	0
Toluene	40(c)	190	170	36	0	0	66	0	0	463

Table 5. Summary by Consitutent for Non-Burial Ground Waste Sites with Soil (Continued).

Constituent	Cut-off Limit	Volume Over Limit 100-BC (byd³)	Volume Over Limit 100-DR (byd³)	Volume Over Limit 100-FR (byd³)	Volume Over Limit 100-HR (byd³)	Volume Over Limit 100-IU (byd³)	Volume Over Limit 100-KR (byd³)	Volume Over Limit 100-NR (byd³)	Volume Over Limit 300-FF (byd³)	Total Volume Over Limit (byd³)
Organic (continued)	**(mg/kg)**									
Trichloroethene	0.5(c)	0	0	0	0	0	0	0	0	0
Vinyl Chloride	0.63(a)	0	0	0	0	0	0	0	0	0
Acenaphthene	4,700(a)	0	0	0	0	0	0	0	0	0
Anthracene	23,000(a)	0	0	0	0	0	0	0	0	0
Benzo(a)anthracene	1.6(a)	11,664	10,439	11,063	2,850	0	1,434	43,888	3,961	85,299
Benzo(a)pyrene	0.16(a)	18,396	11,043	14,235	3,232	0	5,306	43,888	3,961	100,061
Benzo(b)fluoranthene	1.6(a)	11,664	10,439	11,063	2,850	0	1,434	43,888	3,961	85,299
Benzo(ghi)perylene	2,300(f)	0	0	0	0	0	0	0	0	0
Benzo(k)fluoranthene	1.6(g)	0	0	0	0	0	0	0	0	0
Benzoic Acid	310,000(a)	0	0	0	0	0	0	0	0	0
Bis (2-ethylhexhl) phthalate	85(a)	0	0	0	0	0	0	0	0	0
Butylbenzylphthalate	16,000(a)	0	0	0	0	0	0	0	0	0
Carbazole	60(a)	0	0	0	0	0	0	0	0	0
Carbon Tetracloride	9.2(a)	0	0	0	0	0	0	0	0	0
4-Chloro-3-Methylphenol	10(h)	0	0	0	0	0	0	0	0	0
2-Chlorophenol	390(a)	0	0	0	0	0	0	0	0	0
Chloroform	200(a)	0	0	0	0	0	0	0	0	0
4-Chloroaniline	310(a)	0	0	0	0	0	0	0	0	0
Chrysene	16(g)	0	0	0	0	0	0	0	0	0
Di-n-octyl-phthalate	1,600(a)	0	0	0	0	0	0	0	0	0
Di-n-butyl-phthalate	7,800(a)	0	0	0	0	0	0	0	0	0
Dibenzofuran	2,300(f)	0	0	0	0	0	0	0	0	0
1,3 Dichlorobenzene	7,000(a)	0	0	0	0	0	0	0	0	0
1,4 Dichlorobenzene	50(a)	0	0	0	0	0	0	0	0	0
Diethyl phthalate	63,000(a)	0	0	0	0	0	0	0	0	0
Ethylbenzene	20(c)	0	0	0	0	0	0	0	0	0
Fluoranthene	3,100(a)	0	0	0	0	0	0	0	0	0
Fluorene	3,100(a)	0	0	0	0	0	0	0	0	0
Indeno(1,2,3-cd)pyrene	1.6(a)	0	0	0	0	0	0	0	0	0
2-Hexanone	3,900(g)	0	0	0	0	0	0	0	0	0
2-Methylnaphthalene	2,300(f)	0	0	0	0	0	0	0	0	0
4-Methyphenol	390(a)	0	0	0	0	0	0	0	0	0
Naphthalene	3,100(a)	0	0	0	0	0	0	0	0	0

Table 5. Summary by Consitutent for Non-Burial Ground Waste Sites with Soil (Continued).

Constituent	Cut-off Limit	Volume Over Limit 100-BC (byd^3)	Volume Over Limit 100-DR (byd^3)	Volume Over Limit 100-FR (byd^3)	Volume Over Limit 100-HR (byd^3)	Volume Over Limit 100-IU (byd^3)	Volume Over Limit 100-KR (byd^3)	Volume Over Limit 100-NR (byd^3)	Volume Over Limit 300-FF (byd^3)	Total Volume Over Limit (byd^3)
Organic (continued)	**(mg/kg)**									
2-Nitrophenol	4,800(i)	0	0	0	0	0	0	0	0	0
N-Nitrosodiphenylamine	240(a)	0	0	0	0	0	0	0	0	0
Pentachlorophenol	10(a)	0	0	0	0	0	0	0	0	0
Phenathrene	2,300(f)	0	0	0	0	0	0	0	0	0
Phenol	47,000(a)	0	0	0	0	0	0	0	0	0
1,1,1-Trichloroethane	20(c)	0	0	0	0	0	0	0	0	0
Pyrene	2,300(a)	0	0	0	0	0	0	0	0	0
Xylenes	20(c)	0	0	0	0	0	0	0	0	0
2,4-D	780(a)	0	0	0	0	0	0	0	0	0
4,4'DDD	5(a)	0	0	0	0	0	0	0	0	0
4,4'DDE	3.5(a)	0	0	0	0	0	0	0	0	0
Aldrin	0.07(a)	0	0	0	0	0	0	0	0	0
Aroclor-1248	0.16(a)	0	3,181	0	0	0	0	0	88,435	91,616
Aroclor-1254	0.16(a)	0	4,454	0	0	0	0	0	123,809	128,263
Aroclor-1260	0.16(a)	0	0	0	0	0	0	0	0	0
Beta-BHC - Lindane	0.92(a)	0	0	0	0	0	0	0	0	0
Dieldrin	0.075(a)	0	0	0	0	0	0	0	0	0
Endrin	23(a)	0	0	0	0	0	0	0	0	0
Gamma-Chlordane	0.92(a)	0	0	0	0	0	0	0	0	0
Heptachlor	0.27(a)	0	0	0	0	0	0	0	0	0
Radionuclide	**(pCi/g)**									
Americium-241	0.06(p)	219,814	169,989	87,097	108,834	0	300,276	22,084	1,981	910,075
Beryllium-7	0(n)	1,191	1,065	226	0	0	415	0	0	2,897
Carbon-14	0(n)	580,234	454,602	233,491	295,106	0	821,262	107	59,995	2,444,799
Cesium-134	0.0388(n)	0	0	0	0	0	0	0	0	0
Cesium-137	3.517(n)	361,559	270,363	138,758	178,937	0	501,519	140	17,687	1,468,963
Chromium-51	0(n)	0	0	0	0	0	0	0	0	0
Cobalt-58	0(n)	17,267	3,704	7,382	827	0	9,322	0	0	38,502
Cobalt-60	0.0147(n)	471,433	387,368	182,955	242,063	0	664,986	54,202	577,760	2,580,768
Europium-152	0.04(p)	860,111	693,896	332,704	459,688	0	1,247,264	43,888	3,961	3,641,513
Europium-154	0.1151(n)	545,198	426,303	208,883	283,274	0	782,318	0	0	2,245,975
Europium-155	0.0781(n)	0	0	0	0	0	0	0	0	0
Gross Alpha	8.4(o)	261,203	245,521	98,221	149,675	0	400,801	571	604,171	1,760,164

Table 5. Summary by Consitutent for Non-Burial Ground Waste Sites with Soil (Continued).

Constituent	Cut-off Limit	Volume Over Limit 100-BC (byd^3)	Volume Over Limit 100-DR (byd^3)	Volume Over Limit 100-FR (byd^3)	Volume Over Limit 100-HR (byd^3)	Volume Over Limit 100-IU (byd^3)	Volume Over Limit 100-KR (byd^3)	Volume Over Limit 100-NR (byd^3)	Volume Over Limit 300-FF (byd^3)	Total Volume Over Limit (byd^3)
Radionuclide (continued)	**(pCi/g)**									
Gross Beta	16(o)	964,954	806,701	367,059	526,466	0	1,432,112	94,012	569,137	4,760,441
Plutonium-238	0.0045(n)	52,092	8,178	21,614	2,483	0	27,691	0	0	112,058
Plutonium-239/240	0.0203(n)	379,192	304,991	146,015	199,677	0	543,546	22,230	1,981	1,597,631
Potassium-40	18.48(n)	9,725	873	4,582	552	0	5,592	0	0	21,323
Radium-226	1.037(n)	241,578	214,854	93,129	141,076	0	371,102	21,944	46,897	1,130,579
Sodium-22	0(n)	1,010,283	839,860	381,453	562,327	0	1,519,750	0	0	4,313,673
Strontium-90	0.3135(n)	736,442	597,773	283,541	392,380	0	1,070,703	53,776	224,019	3,358,634
Technetium-99	0(n)	373,315	295,725	142,478	197,886	0	543,044	61,722	70	1,614,239
Thorium-228	2.5(o)	24,530	23,051	9,185	14,700	0	38,900	0	35,374	145,741
Thorium-232	1.308(n)	5,832	7,128	5,532	1,425	0	717	21,944	55,042	97,619
Uranium-233/234	1.366(n)	5,832	25,579	5,532	1,425	0	717	21,944	610,906	671,934
Uranium-235	0.0507(n)	77,535	89,239	32,380	44,395	0	114,426	21,944	610,906	990,825
Uranium-238	1.388(n)	5,832	24,764	5,532	1,425	0	717	21,944	588,266	648,480

Qualifier List

(a) Value is based on EPA Region 3 Toxicity Equivalence Factor, which has been adopted by EPA Region 10.

(b) Value listed is 95% UTL for Hanford soil background, *Preliminary Hanford Site Background: Part 1, Soil Background for Nonradioactive Analytes.*

(c) Value is based on State of Washington Model Toxics Control Act Regulation.

(d) Value is typically found in high concentrations at background levels in soils and is considered to be an essential nutrient to the human body. Therefore, it was not evaluated in this report.

(e) Value is based on the reference dose for food of 0.14 mg/kg/d.

(f) Value listed assumes this compound has the toxicity of pyrene.

(g) Value is based on EPA Region II Toxicity Equivalence Factor.

(h) No value provided for this constituent; this value is assumed to be conservative based on similar constituent values.

(i) Value listed assumes this compound has the toxicity of 4-Nitro Phenol.

(j) Value listed assumes this compound has the toxicity of 4-Methyl-2-Pentanone.

(k) Risk based value is less than the background level, therefore 95% UTL is used.

(l) Sample is not listed in field investigation data; value is assumed to be zero.

(m) This is an older facility; therefore, it is assumed to contain 5% lead.

(n) Value is based on preliminary data from the *Hanford Site Background: Part 2, Soil Background for Nonradioactive Analytes* (Hoover 1993).

(o) Background radiation value is based on sample data from the Vernita Site.

(p) LLDs from the *1991 Annual Report of the Environmental Radiation Program of the Department of Health.*

Table 6. Summary by Constituent for Non-Burial Ground Waste Sites with Sludge.

Constituent	Cut-off Limit	Volume Over Limit 100-BC (byd^3)	Volume Over Limit 100-DR (byd^3)	Volume Over Limit 100-FR (byd^3)	Volume Over Limit 100-HR (byd^3)	Volume Over Limit 100-KR (byd^3)	Volume Over Limit 100-NR (byd^3)	Volume Over Limit 300-FF (byd^3)	Total Volume Over Limit (byd^3)
Inorganic	**(mg/kg)**								
Aluminum	230,000(a)	0	0	0	0	0	0	0	0
Antimony	31(a)	0	0	0	0	0	0	0	0
Arsenic	8.92(b)	0	0	0	0	0	0	0	0
Barium	5,500(a)	0	0	0	0	0	0	0	0
Beryllium	1.77(b)	0	0	0	0	0	0	0	0
Cadmium	2(c)	0	0	0	0	0	0	0	0
Chromium	100(c)	31,312	27,800	11,725	18,764	49,656	0	0	139,257
Cobalt	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Copper	2,900(a)	0	0	0	0	0	0	0	0
Iron	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Lead	250(c)	15,656	13,900	5,863	9,382	24,828	0	0	69,629
Magnesium	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Manganese	10,900(e)	0	0	0	0	0	0	0	0
Mercury	1.25(b)	31,312	27,800	11,725	18,764	49,656	0	0	139,257
Nickel	1,600(a)	0	0	0	0	0	0	0	0
Potassium	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Selenium	390(a)	0	0	0	0	0	0	0	0
Silver	390(a)	0	0	0	0	0	0	0	0
Sodium	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Sulfate	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Thallium	5.5(a)	0	0	0	0	0	0	0	0
Vanadium	550(a)	0	0	0	0	0	0	0	0
Zinc	23,000(a)	0	0	0	0	0	0	0	0
Organic	**(mg/kg)**								
Acetone	7,800(a)	0	0	0	0	0	0	0	0
Benzene	.5(c)	0	0	0	0	0	0	0	0
2-Butanone	47,000(a)	0	0	0	0	0	0	0	0
Carbondisulfide	7,800(a)	0	0	0	0	0	0	0	0
1,2-Dichloroethene (total)	700(a)	0	0	0	0	0	0	0	0
4-Methyl-2-Pentanone	3,900(a)	0	0	0	0	0	0	0	0
Methylene Chloride	.5(c)	0	0	0	0	0	0	0	0
Tetrachloroethene	.5(c)	0	0	0	0	0	0	0	0

Table 6. Summary by Constituent for Non-Burial Ground Waste Sites with Sludge (Continued).

Constituent	Cut-off Limit	Volume Over Limit 100-BC (byd^3)	Volume Over Limit 100-DR (byd^3)	Volume Over Limit 100-FR (byd^3)	Volume Over Limit 100-HR (byd^3)	Volume Over Limit 100-KR (byd^3)	Volume Over Limit 100-NR (byd^3)	Volume Over Limit 300-FF (byd^3)	Total Volume Over Limit (byd^3)
Organic (continued)	**(mg/kg)**								
Toluene	40(c)	0	0	0	0	0	0	0	0
Trichloroethene	.5(c)	0	0	0	0	0	0	0	0
Vinyl Chloride	0.63(a)	0	0	0	0	0	0	0	0
Acenaphthene	4,700(a)	0	0	0	0	0	0	0	0
Anthracene	23,000(a)	0	0	0	0	0	0	0	0
Benzo(a)anthracene	1.6(a)	0	0	0	0	0	0	0	0
Benzo(a)pyrene	0.16(a)	0	0	0	0	0	0	0	0
Benzo(b)fluoranthene	1.6(a)	0	0	0	0	0	0	0	0
Benzo(ghi)perylene	2,300(f)	0	0	0	0	0	0	0	0
Benzo(k)fluoranthene	1.6(g)	0	0	0	0	0	0	0	0
Benzoic Acid	310,000(a)	0	0	0	0	0	0	0	0
Bis (2-ethylhexhl) phthalate	85(a)	0	0	0	0	0	0	0	0
Butylbenzylphthalate	16,000(a)	0	0	0	0	0	0	0	0
Carbazole	60(a)	0	0	0	0	0	0	0	0
Carbon Tetracloride	9.2(a)	0	0	0	0	0	0	0	0
4-Chloro-3-Methylphenol	10(h)	0	0	0	0	0	0	0	0
2-Chlorophenol	390(a)	0	0	0	0	0	0	0	0
Chloroform	200(a)	0	0	0	0	0	0	0	0
4-Chloroaniline	310(a)	0	0	0	0	0	0	0	0
Chrysene	16(g)	0	0	0	0	0	0	0	0
Di-n-octyl-phthalate	1,600(a)	0	0	0	0	0	0	0	0
Di-n-butyl-phthalate	7,800(a)	0	0	0	0	0	0	0	0
Dibenzofuran	2,300(f)	0	0	0	0	0	0	0	0
1,3 Dichlorobenzene	7,000(a)	0	0	0	0	0	0	0	0
1,4 Dichlorobenzene	50(a)	0	0	0	0	0	0	0	0
Diethyl phthalate	63,000(a)	0	0	0	0	0	0	0	0
Ethylbenzene	20(c)	0	0	0	0	0	0	0	0
Fluoranthene	3,100(a)	0	0	0	0	0	0	0	0
Fluorene	3,100(a)	0	0	0	0	0	0	0	0
Indeno(1,2,3-cd)pyrene	1.6(a)	0	0	0	0	0	0	0	0
2-Hexanone	3,900(g)	0	0	0	0	0	0	0	0
2-Methylnaphthalene	2,300(f)	0	0	0	0	0	0	0	0

Table 6. Summary by Constituent for Non-Burial Ground Waste Sites with Sludge (Continued).

Constituent	Cut-off Limit	Volume Over Limit 100-BC (byd^3)	Volume Over Limit 100-DR (byd^3)	Volume Over Limit 100-FR (byd^3)	Volume Over Limit 100-HR (byd^3)	Volume Over Limit 100-KR (byd^3)	Volume Over Limit 100-NR (byd^3)	Volume Over Limit 300-FF (byd^3)	Total Volume Over Limit (byd^3)
Organic (continued)	**(mg/kg)**								
4-Methyphenol	390(a)	0	0	0	0	0	0	0	0
Naphthalene	3,100(a)	0	0	0	0	0	0	0	0
2-Nitrophenol	4,800(i)	0	0	0	0	0	0	0	0
N-Nitrosodiphenylamine	240(a)	0	0	0	0	0	0	0	0
Pentachlorophenol	10(a)	0	0	0	0	0	0	0	0
Phenathrene	2,300(f)	0	0	0	0	0	0	0	0
Phenol	47,000(a)	0	0	0	0	0	0	0	0
1,1,1-Trichloroethane	20(c)	0	0	0	0	0	0	0	0
Pyrene	2,300(a)	0	0	0	0	0	0	0	0
Xylenes	20(c)	0	0	0	0	0	0	0	0
2,4-D	780(a)	0	0	0	0	0	0	0	0
4,4'DDD	5(a)	0	0	0	0	0	0	0	0
4,4'DDE	3.5(a)	0	0	0	0	0	0	0	0
Aldrin	0.07(a)	0	0	0	0	0	0	0	0
Aroclor-1248	0.16(a)	0	0	0	0	0	0	0	0
Aroclor-1254	0.16(a)	0	0	0	0	0	0	0	0
Aroclor-1260	0.16(a)	0	0	0	0	0	0	0	0
Beta-BHC - Lindane	0.92(a)	0	0	0	0	0	0	0	0
Dieldrin	0.075(a)	0	0	0	0	0	0	0	0
Endrin	23(a)	0	0	0	0	0	0	0	0
gamma-Chlordane	0.92(a)	0	0	0	0	0	0	0	0
Heptachlor	0.27(a)	0	0	0	0	0	0	0	0
Radionuclide	**(pCi/g)**								
Americium-241	0.06(p)	31,312	27,800	11,725	18,764	49,656	0	0	139,257
Beryllium-7	0(n)	0	0	0	0	0	0	0	0
Carbon-14	0(n)	31,312	27,800	11,725	18,764	49,656	0	0	139,257
Cesium-134	0.0388(n)	0	0	0	0	0	0	0	0
Cesium-137	3.517(n)	31,312	27,800	11,725	18,764	49,656	0	0	139,257
Chromium-51	0(n)	0	0	0	0	0	0	0	0
Cobalt-58	0(n)	0	0	0	0	0	0	0	0
Cobalt-60	0.0147(n)	31,312	27,800	11,725	18,764	49,656	0	0	139,257

Table 6. Summary by Constituent for Non-Burial Ground Waste Sites with Sludge (Continued).

Constituent	Cut-off Limit	Volume Over Limit 100-BC (byd^3)	Volume Over Limit 100-DR (byd^3)	Volume Over Limit 100-FR (byd^3)	Volume Over Limit 100-HR (byd^3)	Volume Over Limit 100-KR (byd^3)	Volume Over Limit 100-NR (byd^3)	Volume Over Limit 300-FF (byd^3)	Total Volume Over Limit (byd^3)
Radionuclide	**(pCi/g)**								
Europium-152	0.04(p)	31,312	27,800	11,725	18,764	49,656	0	0	139,257
Europium-154	0.1151(n)	31,312	27,800	11,725	18,764	49,656	0	0	139,257
Europium-155	0.0781(n)	31,312	27,800	11,725	18,764	49,656	0	0	139,257
Gross Alpha	8.4(o)	31,312	27,800	11,725	18,764	49,656	0	0	139,257
Gross Beta	16(o)	31,312	27,800	11,725	18,764	49,656	0	0	139,257
Plutonium-238	0.0045(n)	31,312	27,800	11,725	18,764	49,656	0	0	139,257
Plutonium-239/240	0.0203(n)	31,312	27,800	11,725	18,764	49,656	0	0	139,257
Potassium-40	18.48(n)	0	0	0	0	0	0	0	0
Radium-226	1.037(n)	0	0	0	0	0	0	0	0
Sodium-22	0(n)	0	0	0	0	0	0	0	0
Strontium-90	0.3135(n)	0	0	0	0	0	0	0	0
Technetium-99	0(n)	0	0	0	0	0	0	0	0
Thorium-228	2.5(o)	0	0	0	0	0	0	0	0
Thorium-232	1.308(n)	0	0	0	0	0	0	0	0
Uranium-233/234	1.366(n)	15,656	13,900	5,863	9,382	24,828	0	0	69,629
Uranium-235	0.0507(n)	15,656	13,900	5,863	9,382	24,828	0	0	69,629
Uranium-238	1.388(n)	15,656	13,900	5,863	9,382	24,828	0	0	69,629

Qualifier List

(a) Value is based on EPA Region 3 Toxicity Equivalence Factor, which has been adopted by EPA Region 10.

(b) Value listed is 95% UTL for Hanford soil background, *Preliminary Hanford Site Background: Part 1, Soil Background for Nonradioactive Analytes.*

(c) Value is based on State of Washington Model Toxics Control Act Regulation.

(d) Value is typically found in high concentrations at background levels in soils and is considered to be an essential nutrient to the human body. Therefore, it was not evaluated in this report.

(e) Value is based on the reference dose for food of 0.14 mg/kg/d.

(f) Value listed assumes this compound has the toxicity of pyrene.

(g) Value is based on EPA Region II Toxicity Equivalence Factor.

(h) No value provided for this constituent; this value is assumed to be conservative based on similar constituent values.

(i) Value listed assumes this compound has the toxicity of 4-Nitro Phenol.

(j) Value listed assumes this compound has the toxicity of 4-Methyl-2-Pentanone.

(k) Risk based value is less than the background level, therefore 95% UTL is used.

(l) Sample is not listed in field investigation data; value is assumed to be zero.

(m) This is an older facility; therefore, it is assumed to contain 5% lead.

(n) Value is based on preliminary data from the *Hanford Site Background: Part 2, Soil Background for Nonradioactive Analytes* (Hoover 1993).

(o) Background radiation value is based on sample data from the Vernita Site.

(p) LLDs from the *1991 Annual Report of the Environmental Radiation Program of the Department of Health.*

Sites that were not analogous to any of the sampled sites were assumed to have contaminant concentrations equal to the average of all the sampled data. Since most of the sites suspected of having higher contamination concentrations have been investigated more thoroughly, it is anticipated that this assumption is quite conservative.

Total volumes of hazardous, radioactive, or mixed waste were determined by checking the contaminated intervals to eliminate overlapping volumes and summing the remaining volumes of contaminated volumes. The hazardous volumes and radioactive volumes were compared to determine the quantity of mixed waste. The hazardous and mixed waste categories were divided into TSCA waste and non-TSCA waste. The TSCA category may contain materials that are contaminated with both RCRA defined hazardous constituents and TSCA defined hazardous constituents. The non-TSCA category contains only volumes that are contaminated with hazardous constituents that are not regulated by TSCA. The estimates of the non-TSCA hazardous waste, TSCA hazardous waste, non-TSCA mixed waste, TSCA mixed waste, and radioactive waste for each reference site or group of reference sites are listed in Appendix H-1 for the soil volumes from the waste sites, and Appendix H-2 for the sludge volumes from waste sites. Table 4 summarizes, by operable unit, the total volume of contaminated soil in each waste category; there is a separate summary for soil and sludge volumes.

4.3 BURIAL GROUND WASTE VOLUMES

All burial grounds are summed together to provide an overall estimate of the volume of rubble/debris and associated soil expected from these sites. Much of the material will require grouting and/or placement in single use containers prior to disposal in the ERDF.

Waste volumes for sampled burial grounds, were categorized as discussed above. The sampled burial grounds include 618-4 and 618-5. There were also several 300 Area burial grounds that were considered analogous to 618-5.

The contamination levels at the remaining burial grounds is much higher than the sampled sites. Based on information provided in the WIDS database and limited burial ground logs, the non-sampled burial grounds were assumed to be 100 percent radioactively contaminated. None of the non-sampled burial ground waste was categorized as hazardous or mixed; however, it is probable that there is some mixed waste present in the burial grounds.

The estimates of the non-TSCA hazardous waste, TSCA hazardous waste, non-TSCA mixed waste, TSCA mixed waste, and radioactive waste for groupings of burial grounds are listed in Appendix H-3. Table 4 also summarizes, by operable unit, the total volume from the burial ground for each of the waste categories. Table 7 lists the total volume of waste over the cut-off limits for each of the constituents in the burial ground.

Some of the waste in the burial grounds may be transuranic (TRU) or high-level waste. However, it is difficult to assure its existence or estimate quantities with the limited data that is currently available. The burial ground waste volumes that do not meet the ERDF waste acceptance criteria will require alternate disposal.

Table 7. Summary by Constituent for Burial Grounds.

Constituent	Cut-off Limit	Volume Over Limit 100-BC (byd^3)	Volume Over Limit 100-DR (byd^3)	Volume Over Limit 100-FR (byd^3)	Volume Over Limit 100-HR (byd^3)	Volume Over Limit 100-IU (byd^3)	Volume Over Limit 100-KR (byd^3)	Volume Over Limit 100-NR (byd^3)	Volume Over Limit 300-FF (byd^3)	Total Volume Over Limit (byd^3)
Inorganic	**(mg/kg)**									
Aluminum	230,000(a)	0	0	0	0	0	0	0	0	0
Antimony	31(a)	0	0	0	0	0	0	0	0	0
Arsenic	8.92(b)	0	0	0	0	0	0	0	0	0
Barium	5,500(a)	0	0	0	0	0	0	0	0	0
Beryllium	1.77(b)	0	0	0	0	0	0	0	0	0
Cadmium	2(c)	0	0	0	0	0	0	0	58,009	58,009
Chromium	100(c)	0	0	0	0	0	0	0	20,900	20,900
Cobalt	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Copper	2,900(a)	0	0	0	0	0	0	0	0	0
Iron	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Lead	250(c)	0	0	0	0	0	0	0	13,933	13,933
Magnesium	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Manganese	10,900(e)	0	0	0	0	0	0	0	0	0
Mercury	1.25(b)	0	0	0	0	0	0	0	136,917	136,917
Nickel	1,600(a)	0	0	0	0	0	0	0	0	0
Potassium	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Selenium	390(a)	0	0	0	0	0	0	0	0	0
Silver	390(a)	0	0	0	0	0	0	0	0	0
Sodium	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Sulfate	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Thallium	5.5(a)	0	0	0	0	0	0	0	0	0
Vanadium	550(a)	0	0	0	0	0	0	0	0	0
Zinc	23,000(a)	0	0	0	0	0	0	0	0	0
Organic	**(mg/kg)**									
Acetone	7,800(a)	0	0	0	0	0	0	0	0	0
Benzene	0.5(c)	0	0	0	0	0	0	0	0	0
2-Butanone	47,000(a)	0	0	0	0	0	0	0	0	0
Carbondisulfide	7,800(a)	0	0	0	0	0	0	0	0	0
1,2-Dichloroethene (total)	700(a)	0	0	0	0	0	0	0	0	0
4-Methyl-2-Pentanone	3,900(a)	0	0	0	0	0	0	0	0	0
Methylene Chloride	0.5(c)	0	0	0	0	0	0	0	0	0
Tetrachloroethene	0.5(c)	0	0	0	0	0	0	0	0	0

Table 7. Summary by Constituent for Burial Grounds (Continued).

Constituent	Cut-off Limit	Volume Over Limit 100-BC (byd^3)	Volume Over Limit 100-DR (byd^3)	Volume Over Limit 100-FR (byd^3)	Volume Over Limit 100-HR (byd^3)	Volume Over Limit 100-IU (byd^3)	Volume Over Limit 100-KR (byd^3)	Volume Over Limit 100-NR (byd^3)	Volume Over Limit 300-FF (byd^3)	Total Volume Over Limit (byd^3)
Organic (continued)	**(mg/kg)**									
Toluene	40(c)	0	0	0	0	0	0	0	0	0
Trichloroethene	0.5(c)	0	0	0	0	0	0	0	0	0
Vinyl Chloride	0.63(a)	0	0	0	0	0	0	0	0	0
Acenaphthene	4,700(a)	0	0	0	0	0	0	0	0	0
Anthracene	23,000(a)	0	0	0	0	0	0	0	0	0
Benzo(a)anthracene	1.6(a)	0	0	0	0	0	0	0	0	0
Benzo(a)pyrene	0.16(a)	0	0	0	0	0	0	0	0	0
Benzo(b)fluoranthene	1.6(a)	0	0	0	0	0	0	0	0	0
Benzo(ghi)perylene	2,300(f)	0	0	0	0	0	0	0	0	0
Benzo(k)fluoranthene	1.6(g)	0	0	0	0	0	0	0	0	0
Benzoic Acid	310,000(a)	0	0	0	0	0	0	0	0	0
Bis (2-ethylhexhl) phthalate	85(a)	0	0	0	0	0	0	0	0	0
Butylbenzylphthalate	16,000(a)	0	0	0	0	0	0	0	0	0
Carbazole	60(a)	0	0	0	0	0	0	0	0	0
Carbon Tetracloride	9.2(a)	0	0	0	0	0	0	0	0	0
4-Chloro-3-Methylphenol	10(h)	0	0	0	0	0	0	0	0	0
2-Chlorophenol	390(a)	0	0	0	0	0	0	0	0	0
Chloroform	200(a)	0	0	0	0	0	0	0	0	0
4-Chloroaniline	310(a)	0	0	0	0	0	0	0	0	0
Chrysene	16(g)	0	0	0	0	0	0	0	0	0
Di-n-octyl-phthalate	1,600(a)	0	0	0	0	0	0	0	0	0
Di-n-butyl-phthalate	7,800(a)	0	0	0	0	0	0	0	0	0
Dibenzofuran	2,300(f)	0	0	0	0	0	0	0	0	0
1,3 Dichlorobenzene	7,000(a)	0	0	0	0	0	0	0	0	0
1,4 Dichlorobenzene	50(a)	0	0	0	0	0	0	0	0	0
Diethyl phthalate	63,000(a)	0	0	0	0	0	0	0	0	0
Ethylbenzene	20(c)	0	0	0	0	0	0	0	0	0
Fluoranthene	3,100(a)	0	0	0	0	0	0	0	0	0
Fluorene	3,100(a)	0	0	0	0	0	0	0	0	0
Indeno(1,2,3-cd)pyrene	1.6(a)	0	0	0	0	0	0	0	0	0
2-Hexanone	3,900(g)	0	0	0	0	0	0	0	0	0
2-Methylnaphthalene	2,300(f)	0	0	0	0	0	0	0	0	0
4-Methyphenol	390(a)	0	0	0	0	0	0	0	0	0

Table 7. Summary by Constituent for Burial Grounds (Continued).

Constituent	Cut-off Limit	Volume Over Limit 100-BC (byd³)	Volume Over Limit 100-DR (byd³)	Volume Over Limit 100-FR (byd³)	Volume Over Limit 100-HR (byd³)	Volume Over Limit 100-IU (byd³)	Volume Over Limit 100-KR (byd³)	Volume Over Limit 100-NR (byd³)	Volume Over Limit 300-FF (byd³)	Total Volume Over Limit (byd³)
Organic (continued)	**(mg/kg)**									
Naphthalene	3,100(a)	0	0	0	0	0	0	0	0	0
2-Nitrophenol	4,800(i)	0	0	0	0	0	0	0	0	0
N-Nitrosodiphenylamine	240(a)	0	0	0	0	0	0	0	0	0
Pentachlorophenol	10(a)	0	0	0	0	0	0	0	0	0
Phenathrene	2,300(f)	0	0	0	0	0	0	0	0	0
Phenol	47,000(a)	0	0	0	0	0	0	0	0	0
1,1,1-Trichloroethane	20(c)	0	0	0	0	0	0	0	0	0
Pyrene	2,300(a)	0	0	0	0	0	0	0	0	0
Xylenes	20(c)	0	0	0	0	0	0	0	0	0
2,4-D	780(a)	0	0	0	0	0	0	0	0	0
4,4'DDD	5(a)	0	0	0	0	0	0	0	0	0
4,4'DDE	3.5(a)	0	0	0	0	0	0	0	0	0
Aldrin	0.07(a)	0	0	0	0	0	0	0	0	0
Aroclor-1248	0.16(a)	0	0	0	0	0	0	0	0	0
Aroclor-1254	0.16(a)	0	0	0	0	0	0	0	41,800	41,800
Aroclor-1260	0.16(a)	0	0	0	0	0	0	0	0	0
Beta-BHC - Lindane	0.92(a)	0	0	0	0	0	0	0	0	0
Dieldrin	0.075(a)	0	0	0	0	0	0	0	0	0
Endrin	23(a)	0	0	0	0	0	0	0	0	0
gamma-Chlordane	0.92(a)	0	0	0	0	0	0	0	0	0
Heptachlor	0.27(a)	0	0	0	0	0	0	0	0	0
Radionuclide	**(pCi/g)**									
Americium-241	0.06(p)	0	0	0	0	0	0	0	0	0
Beryllium-7	0(n)	0	0	0	0	0	0	0	0	0
Carbon-14	0(n)	150,155	186,493	77,093	86,222	0	259,259	0	0	759,222
Cesium-134	0.0388(n)	0	0	0	0	0	0	0	0	0
Cesium-137	3.517(n)	150,155	186,493	76,642	86,222	0	259,259	0	0	758,771
Chromium-51	0(n)	0	0	0	0	0	0	0	58,009	58,009
Cobalt-58	0(n)	0	0	0	0	0	0	0	0	0
Cobalt-60	0.0147(n)	249,102	288,964	91,116	101,963	1,592	259,523	0	66,855	1,059,117
Europium-152	0.04(p)	150,155	186,493	76,642	86,222	0	259,259	0	0	758,771
Europium-154	0.1151(n)	0	0	0	0	0	259,259	0	0	259,259

Table 7. Summary by Constituent for Burial Grounds (Continued).

Constituent	Cut-off Limit	Volume Over Limit 100-BC (byd^3)	Volume Over Limit 100-DR (byd^3)	Volume Over Limit 100-FR (byd^3)	Volume Over Limit 100-HR (byd^3)	Volume Over Limit 100-IU (byd^3)	Volume Over Limit 100-KR (byd^3)	Volume Over Limit 100-NR (byd^3)	Volume Over Limit 300-FF (byd^3)	Total Volume Over Limit (byd^3)
Radionuclide (continued)	**(pCi/g)**									
Europium-155	0.0781(n)	0	0	0	0	0	0	0	0	0
Gross Alpha	8.4(o)	522,662	572,267	218,350	145,484	5,994	260,253	0	452,446	2,177,456
Gross Beta	16(o)	522,662	572,267	218,350	145,484	5,994	260,253	0	452,446	2,177,456
Plutonium-238	0.0045(n)	0	0	0	0	0	0	0	0	0
Plutonium-239/240	0.0203(n)	0	0	43,383	0	0	259,259	0	0	302,642
Potassium-40	18.48(n)	0	0	0	0	0	0	0	0	0
Radium-226	1.037(n)	0	0	0	0	0	0	0	29,004	29,004
Sodium-22	0(n)	0	0	0	0	0	0	0	0	0
Strontium-90	0.3135(n)	150,155	186,493	163,407	86,222	0	259,259	0	100,946	946,482
Technetium-99	0(n)	0	0	0	0	0	0	0	0	0
Thorium-228	2.5(o)	0	0	0	0	0	0	0	0	0
Thorium-232	1.308(n)	0	0	0	0	0	0	0	13,933	13,933
Uranium-233/234	1.366(n)	0	0	0	0	0	0	0	330,705	330,705
Uranium-235	0.0507(n)	0	0	0	0	0	0	0	344,479	344,479
Uranium-238	1.388(n)	0	0	0	0	0	0	0	335,771	335,771

Qualifier List

(a) Value is based on EPA Region 3 Toxicity Equivalence Factor, which has been adopted by EPA Region 10.

(b) Value listed is 95% UTL for Hanford soil background, *Preliminary Hanford Site Background: Part 1, Soil Background for Nonradioactive Analytes*.

(c) Value is based on State of Washington Model Toxics Control Act Regulation.

(d) Value is typically found in high concentrations at background levels in soils and is considered to be an essential nutrient to the human body. Therefore, it was not evaluated in this report.

(e) Value is based on the reference dose for food of 0.14 mg/kg/d.

(f) Value listed assumes this compound has the toxicity of pyrene.

(g) Value is based on EPA Region II Toxicity Equivalence Factor.

(h) No value provided for this constituent; this value is assumed to be conservative based on similar constituent values.

(i) Value listed assumes this compound has the toxicity of 4-Nitro Phenol.

(j) Value listed assumes this compound has the toxicity of 4-Methyl-2-Pentanone.

(k) Risk based value is less than the background level, therefore 95% UTL is used.

(l) Sample is not listed in field investigation data; value is assumed to be zero.

(m) This is an older facility; therefore, it is assumed to contain 5% lead.

(n) Value is based on preliminary data from the *Hanford Site Background: Part 2, Soil Background for Nonradioactive Analytes* (Hoover 1993).

(o) Background radiation value is based on sample data from the Vernita Site.

(p) LLDs from the *1991 Annual Report of the Environmental Radiation Program of the Department of Health.*

5.0 OCCUPATIONAL HEALTH EVALUATION FOR SAMPLED WASTE SITES

This section includes a discussion of the potential occupational health hazards associated with the constituents reported in the field investigation data for waste sites in operable units 100-BC-1, 100-DR-1, 100-HR-1, 100-NR-1, and 300-FF-1. The analysis of the sampled waste sites was extrapolated to all waste sites included in this study.

Safe soil concentration limits were determined for the constituents reported in the field investigation data. The occupational soil concentrations were compared with the sampled concentrations of the constituents to identify the waste site volumes that exceed occupational safety limits and pose potential health hazards to workers at the ERDF. The evaluation for the inorganic and organic constituents was based on occupational inhalation limits; radionuclide constituent evaluation includes both occupational inhalation and external radiation exposure limits.

The levels of the contamination and associated health hazards evaluated in this engineering study are based on sampling data from the waste sites. The conditions at the waste sites may not be completely representative of the contamination levels that will be experienced at the ERDF. If treatment options such as volume reduction are used, the resultant waste could contain higher contaminant concentrations than the original waste from the waste sites. In addition, solid waste derived from either soil washing or groundwater treatment could contain higher concentration of contaminants than encountered in the original matrix. At present, it has not been determined which, or if any, waste treatment processes will be used. The field investigation data from the waste sites is currently the best available information to estimate the levels of contamination that will be present in the waste received at the ERDF. When waste treatment processes are better defined, the information in this study can be utilized to estimate final waste concentrations.

This section includes an analysis of all sampled waste sites and the sites considered analogous to the reference sites. This section also includes non-burial ground waste sites that were not considered analogous to any sampled site. All non-sampled burial grounds are evaluated separately in Section 6.0.

5.1 OCCUPATIONAL EXPOSURE LIMITS

The analysis of the potential occupational health hazards in the waste volumes was limited to the inhalation pathway for all constituents. External exposure limits were also considered for radionuclide constituents. Based on normal operations at the proposed ERDF, these pathways were determined to be the most probable for the constituents. Limits for ingestion, and skin and/or eye contact were not determined for constituents because they are not probable exposure pathways. Personnel normally occupying the ERDF trench will include heavy equipment operators and truck drivers. These personnel will normally be inside an enclosed cab with filtered air so there will not be direct contact with constituents under normal operating conditions. The most probable exposure scenario is failure of filters due to excessive dust, or personnel movement from one vehicle to another. For this reason, inhalation and external radiation exposure were the chosen exposure pathway included in this evaluation. The analysis in this engineering study does not include an evaluation of worker health hazards in emergency situations or during potential accidents at the ERDF.

Calculations for the maximum occupational concentration limits for soil contamination were based on inhalation limits and the maximum expected dust concentrations at the ERDF.

Several alternatives were considered in determining the appropriate limits and/or requirements for the inhalation or external radiation limits. Risk-based limits are typically used to determine environmental (soil) clean-up levels based on expected uses of land and/or waters, and expected public size, age, and exposure duration. It was determined that it would be more applicable to base the analysis in this study on OSHA, National Institute for Occupational Safety and Health Standards (NIOSH), DOE Orders, and WAC published exposure limits for occupational workers. These sources define the inhalation limits and external exposure limits appropriate for an occupational safety evaluation.

5.1.1 Inorganic and Organic Inhalation Limits

Occupational air inhalation limits for inorganic and organic constituents were obtained from WAC Title 296, Chapter 62, Table 1. If limits were not provided in the WAC, values were obtained from *OSHA, Department of Labor, Occupational Safety and Health Standards*, 29 CFR 1910.1000, Table Z-1-A, or *National Institute for Occupational Safety and Health Pocket Guide to Chemical Hazards.* NIOSH identifies several chemicals as occupational carcinogens, but they have not identified thresholds for these carcinogens. Since NIOSH limits are recommendations only and carcinogen limits are not available, WAC or OSHA limits are used whenever possible.

5.1.2 Radionuclide Inhalation Limits

Quantification of exposures to radionuclide constituents requires a separate analysis because the units used to express the concentrations of radioactive and non-radionuclide constituents are different. Unlike non-radionuclide constituents, the intake estimates for radionuclides should not be divided by body weight or averaged over time. The calculated intakes represent cumulative radionuclide activities inhaled or ingested over a lifetime. Permissible soil concentrations for radionuclides associated with inhalation are determined using Derived Air Concentrations (DACs) from Attachment 1 of *Radiation Protection for Occupational Workers*, DOE Order 5480.11.

5.1.3 Radionuclide External Radiation Limits

The analysis of the radiation doses associated with external exposure to radionuclide constituents are calculated based on dose limits rather than on a risk assessment. It was determined that this method would be more consistent with DOE Orders and standard occupational limits for workers exposed to radionuclide constituents.

5.2 INHALATION RISKS FOR INORGANIC CONSTITUENTS

Occupational based soil concentration limits for inorganic constituents were calculated with the published permissible occupational air limits for inhalation exposure discussed in Section 5.1.1 and the maximum dust concentration expected during extreme conditions at the ERDF. The safe soil concentrations for inorganic constituents (WC_{soil}), based on the possible particulates in the air, were determined by dividing permissible air exposure limits (PEL) by the maximum dust concentration (C_{dust}) and multiplying by a conversion factor (CF). The analysis is discussed in detail in the *Risk Assessment Guidance for Superfund: Volume I - Human Health Evaluation Manual, Part B, Development of Risk-based Preliminary Remediation Goals* (EPA 1991).

$WC_{soil} = (PEL / C_{dust}) \times CF$

Units: WC_{soil} in milligrams per kilogram (mg/kg)
PEL in milligrams per cubic meter (mg/m^3)
C_{dust} in mg/m^3

The maximum concentration of dust particulate observed in the Tri-City area during a dust storm is approximately 1.7 mg/m^3 (Rowe 1993). This dust particulate value was used to calculate one set of safe soil concentrations. The maximum soil concentrations were also evaluated with the OSHA dust particulate limit (5 mg/m^3). To ensure a conservative estimate and account for possible constituent concentration in fine soil, this value was doubled, and a C_{dust} of 10 mg/m^3 was used for calculating the second set of safe soil concentrations. The second set of concentration limits were used in the comparison with the sampled constituent concentrations. Both sets of the concentration limits for inorganic constituents are listed in Appendix I-1.

Table 8 compares the maximum encountered soil concentration for the inorganic constituents to the calculated occupational soil concentration limits; none of the sampled inorganic constituents exceed the occupational based limits.

Non-sampled waste sites that are considered analogous to the sampled waste sites, were assumed to have inorganic constituents levels below occupational limits. The sites that contained unknown waste types, as defined in Appendix G, should be investigated further to determine possible occupational health hazards to the ERDF workers. However, it is anticipated that none of the waste sites at the Hanford Site contain inorganic constituents near the occupational concentrations limits.

5.3 INHALATION & VOLATILIZATION RISKS FOR ORGANIC CONSTITUENTS

Occupational based soil concentration limits for organic constituents were calculated with the published permissible occupational air limits for inhalation for all organic constituents and volatilization exposure limits for volatile organic constituents.

Occupational based soil concentration limits for inhalation were calculated with the limits discussed in Section 5.1.1. The inhalation calculations and assumptions are discussed in Section 5.2.

The occupational constituent concentrations for volatile organic constituents were also calculated with the volatilization exposure limits; the lowest of the two limits was used in the analysis of the waste volumes. In most cases, the controlling factor for the volatile organic constituents was the volatilization factor and not particulate inhalation limits.

The safe occupational constituent limits based on volatilization, were calculated by multiplying the PEL by the volatilization factor (VF).

$WC_{soil} = (PEL \times VF)$

Units: WC_{soil} in mg/kg
PEL in mg/m^3
VF in cubic meters per kilogram (m^3/kg)

Table 8. Inorganic Contaminant Levels.

Constituents	Occupational Concentration Limit for Soil Contamination (mg/kg)	Maximum Soil Concentration Encountered (mg/kg)	Site Where Maximum Concentration Encountered
Aluminum	500,000	58,600	618-4
Antimony	50,000	18.6	1607-H2
Arsenic	10,000 (a)	47	116-H-7
Barium	50,000	4,260	1607-H2
Beryllium	200	3.3	316-2
Cadmium	20,000	28.5	1607-H2
Chromium	50,000	2,510	1607-H2
Cobalt	5,000	80.6	116-DR-9
Copper	100,00	95,300	316-1
Iron	100,000	44,600	116-C-5
Lead	5,000	747	618-4
Magnesium	1,000,000	4,710	116-DR-9
Manganese	100,000	921	316-1
Mercury	1,000	37	1607-H2
Nickel	10,000	1,750	316-1
Potassium	200,000	1,200	116-DR-9
Selenium	20,000	7.8	1607-H2
Silver	1,000	362	316-1
Sodium	500,000	389	116-D-9
Sulfate	(b)	7,115	1607-H2
Thallium	10,000	5.4	1607-H2
Vanadium	5,000	239	316-1
Zinc	100,000	6,160	1607-H2

(a) At this level, half-mask air purifying equipped with efficient filter or any half-mask supplied air respirator is required, per CFR 29 1910.1018.

(b) Occupational limits not available in WAC, OSHA, or NIOSH for this constituent.

The analysis is discussed in detail in the *Risk Assessment Guidance for Superfund: Volume I - Human Health Evaluation Manual, Part B, Development of Risk-based Preliminary Remediation Goals* (EPA 1991).

The VF is a chemical specific value; the equation and calculated values of the VF are listed in Appendix I-2.

Calculated values for volatilization based safe soil concentration limits for the volatile organic constituents are shown in Appendix I-2.

Table 9 compares the maximum encountered soil concentration for the organic constituents to the calculated occupational soil concentration limits; none of the sampled organic constituents exceed the occupational based limits.

Non-sampled waste sites that are considered analogous to the sampled waste sites, were assumed to have organic constituents levels below occupational limits. The sites that contained unknown waste types, as defined in Appendix G, should be investigated further to determine possible occupational health hazards to the ERDF workers. However, it is anticipated that none of the waste sites at the Hanford Site contain organic constituents near the occupational concentrations limits.

5.4 INHALATION RISKS FOR RADIONUCLIDES

Occupational soil constituent concentrations for radionuclide constituents were determined using DACs from Attachment 1 of DOE Order 5480.11. A DAC is a radionuclide air concentration obtained by dividing the annual limit on intake (ALI) by the volume of air breathed by an average worker during a working year. The ALI is the quantity of a single radionuclide which, if inhaled or ingested in one year, would irradiate a person, represented by reference man, to the limiting value for control of the workplace. Applicable DACs are listed in column 1 of Appendix I-3. DACs are based on an inhalation rate of 1.2 cubic meters per hour (m^3/hr) for 2,000 working hours per year. When more than one DAC is given in Attachment 1 of DOE Order 5490.11, the smallest value was used. Column 2 of Appendix I-3 converts the values to 1250 hours per year, which is the average time anticipated for workers to be in the ERDF trench.

DACs are based on higher limits than the Hanford Standards because the dust concentrations used would only occur during extreme conditions. Since these conditions would rarely occur and are based on the exposure time, the analysis was based on either a stochastic dose limit of 5 roentgen equivalent man (rem) or a nonstochastic dose limit of 50 rem, whichever is more limiting as determined from DOE Order 5480.11. Calculated values for radionuclide concentration in soils assume that the relative concentration of radionuclide constituents in airborne dust is equal to the relative concentration of radionuclide constituents in soil. This may be a non-conservative assumption, because radionuclide constituents may concentrate in fine fractions of soil. Dose-based concentrations were determined with the methods discussed in DOE Order 5480.11. The values were calculated by using the time adjusted DAC, dividing by the dust concentration in the air (10 mg/m^3), and multiplying by a CF as indicated in the following formula:

Table 9. Organic Contaminant Levels.

Contituent Type	Constituents	Occupational Concentration Limit for Soil Contamination (mg/kg)	Maximum Soil Concentration Encountered (mg/kg)	Site Where Maximum Concentration Encountered
Volatile	Acetone	113,303,414	2.800	UPR-100-N-17
	Benzene	82,960	0.190	UPR-100-N-17
	2-Butanone	49,439,713	0.007	116-N-2
	Carbon Disulfide	1,200,000	0.200	116-B-5
	Carbon Tetrachloride	15,983	0.008	116-N-1
	Chloroform	20,070	0.003	120-N-2 116-N-1
	1,2-Dichloroethene (total)	13,954,900	0.008	618-4
	Ethylbenzene	2,751,377	0.33	UPR-100-N-17
	2-Hexanone	203,324	0.001	UPR-100-N-4 & UPR-100-N-8
	4-Methyl-2-Pentanone	20,500,000	0.011	116-B-2
	Methylene Chloride	5,225,567	0.063	1607-H2
	Tetrachloroethene	4,530,377	0.300	618-4
	Toluene	17,944,593	0.077	116-B-5
	Trichloroethene	7,004,964	0.390	618-4
	Vinyl Chloride	6,524	0.540	316-5
Semi-Volatile	Acenaphthene (coal tar)	20,000	0.340	116-H-1
	Anthracene (coal tar)	20,000	6.300	UPR-100-N-17
	Aroclor-1248	50,000	5.500	316-1
	Aroclor-1254	50,000	2.700	618-4
	Aroclor-1260	50,000	1.200	100-HR-1 Electric Facilities
	Benzo(a)anthracene (coal tar)	20,000	1.800	1607-H4
	Benzo(a)pyrene (coal tar)	20,000	0.940	1607-H4
	Benzo(b)fluoranthene (coal tar)	20,000	2.400	1607-H4
	Benzo(ghi)perylene (coal tar)	20,000	0.460	1607-H4
	Benzo(k)fluoranthene (coal tar)	20,000	0.760	116-H-1
	Benzoic Acid	20,000 (a)	1.800	116-D-1A
	Bis (2-ethylhexhl) phthalate	500,000	33.000	300 Area Sanitary Sewer System
	Butylbenzylphthalate	20,000 (a)	2.600	130-D-1
	Carbazole	20,000 (a)	0.150	1076-H4
	4-Chloro-3-Methylphenol	20,000 (a)	0.038	116-DR-1
	2-Chlorophenol	20,000 (a)	0.047	116-DR-1
	4-Chloroaniline	20,000 (a)	6.300	300 Area Sanitary Sewer System
	Chrysene (coal tar)	20,000	0.920	116-H-1 1607-H4
	Di-n-octyl-phthalate	20,000 (a)	0.038	116-D-6
	Di-n-butyl-phthalate	20,000 (a)	4.300	132-D-3
	Dibenzofuran	20,000 (a)	0.120	300 Area Ash Pits

Table 9. Organic Contaminant Levels (Continued).

Contituent Type	Constituents	Occupational Concentration Limit for Soil Contamination (mg/kg)	Maximum Soil Concentration Encountered (mg/kg)	Site Where Maximum Concentration Encountered
Semi-Volatile continued	1,3 Dichlorobenzene	30,000,000	0.038	116-D-1A
	1,4 Dichlorobenzene	45,000,000	0.051	116-N-2
	Diethylphthalate	500,000	0.130	130-D-1
	Fluoranthene (coal tar)	20,000	2.900	1607-H4
	Fluorene - coal tar	20,000	0.190	116-H-1
	Indeno(1,2,3-cd)pyrene	10,000	0.520	116-H-1
	2-Methylnaphthalene (coal tar)	20,000	1.300	UPR-100-N-17
	4-Methyphenol - cresol	2,200,000	1.000	300 Area Sanitary Sewer System
	Naphthalene	5,000,000	4.100	UPR-100-N-17
	2-Nitrophenol	20,000 (a)	0.053	116-DR-9
	N-Nitrosodiphenylamine	100	0.110	116-B-2
	Pentachlorophenol	50,000	0.077	116-C-5
	Phenathrene (coal tar)	20,000	2.500	UPR-100-N-17
	Phenol	1,900,000	0.35	116-D-7
	Pyrene (coal tar)	20,000	2.700	1607-H4
Pesticides	2,4-D	1,000,000	-	Wipe Sample Only
	4,4'DDD	20,000 (a)	0.110	1607-H4
	4,4'DDE	20,000 (a)	0.012	1607-H4
	Aldrin	25,000	0.0017	116-DR-9
	Dieldrin	25,000	0.021	116-D-1A
	Endrin	10,000	0.016	116-D-2
	gamma-Chlordane	50,000	0.018	1607-H4
	Heptachlor	50,000	0.00846	132-D-3

(a) WAC, OSHA, or NIOSH values are not available for this constiutent. Value is assumed to be similar to coal tar.

$WC_{soil} = (DAC / C_{dust}) \times CF$

Units: WC_{soil} in picocurries per gram (pCi/g)
DAC in microcurries per milliliter (µCi/ml)
C_{dust} in mg/m^3

The OSHA limit for the respirable fraction of dust particulates is 5 mg/m^3. To be conservative and account for possible radionuclide concentration in fines, this value was doubled, and a C_{dust} of 10 mg/m^3 was used.

Calculated dose-based soil concentration limits for radionuclide constituents are listed in column 3 of Appendix I-3.

Table 10 compares the maximum encountered soil concentration for the radionuclide constituents to the calculated occupational soil concentration limits. None of the radionuclide constituents exceed inhalation exposure limits . Some of the radionuclide constituents are near occupational exposure limits, but the limits assume continuous exposure during the working day for an entire year. The materials containing the higher concentrations are sludges. Sludges will only be present occasionally and will not cause the substantial dust plumes assumed in the calculations in this study.

Since the sampled waste sites contain levels of radionuclide constituents below occupational constituent concentration limits, all other non-sampled waste sites that are considered analogous to the sampled waste site, are assumed to also have radionuclide constituents levels below occupational limits. The sites that contained unknown waste types, as defined in Appendix G, need to be investigated further to determine the possible hazards to the ERDF workers.

5.5 RADIATION EXTERNAL EXPOSURE

To simplify calculations for external dose in the ERDF trench, the radiation source was assumed to be an infinite plane with infinite depth. During operations in the trench, this assumption should be fairly close to actual conditions. This assumption may not be conservative if there is a large dose coming from trench sides; however, normal operations will be maintained on a long slope which is approximated by an infinite plane assumption.

Dose coefficients for this analysis are provided in EPA's Federal Guidance Report No. 12 (EPA 1993), and are based on the assumption of a continuous exposure. These dose coefficients were therefore adjusted for the exposure conditions of interest (5 hours per day average, 5 days per week, and 50 weeks per year working time). The soil density is assumed to be 1.6 grams per cubic centimeter (g/cm^3). Soil concentration values were determined by multiplying the inverse of the dose coefficient for occupational exposure by doses of concern. Appendix J lists soil concentration values associated with 50 millirem per year (mrem/yr), 100 mrem/yr, 250 mrem/yr, and 5 rem per year (rem/yr). A comparison of the 5 rem/yr exposure with the inhalation table (Appendix I-3) determines the controlling exposure pathway.

For non-radiation workers at the ERDF, the annual effective does equivalent must be maintained below 100 mrem/yr, in accordance with WHC-CM-4-10. The WHC occupational limit for radiation worker exposure is 1 rem/yr and the DOE limit is 5 rem/yr per DOE Order

Table 10. Radionuclide Soil Contamination Associated with DOE Order 5480.11 Dose Limits via Inhalation (pCi/kg).

Constituents	Occupational Concentration Limit for Soil Contamination (a) (pCi/kg)	Maximum Soil Concentration Encountered (pCi/kg)	Site Where Maximum Concentration Encountered
Americium-241	300	34	116-C-5
Beryllium-7	1,000,000,000	90	116-D-1A
Carbon-14	200,000,000	640	116-C-5
Cesium-137	10,000,000	800	116-C-5
Chromium-51	1,000,000,000	3.5	618-5
Cobalt-58	50,000,000	14.1	116-DR-1
Cobalt-60	2,000,000	310	116-C-5
Europium-152	2,000,000	1,400	116-C-5
Europium-154	1,000,000	410	116-C-5
Europium-155	6,000,000	41	116-C-5
Plutonium-238	500	9.4	116-C-5
Plutonium-239	300	190	116-C-5
Plutonium-240	300	190	116-C-5
Potassium-40	30,000,000 (b)	20	116-DR-1
Radium-226	50,000	42.8	116-D-1A
Sodium-22	50,000,000	9.91	116-DR-1
Strontium-90	300,000	770	116-C-5
Technetium-99	50,000,000	1.5	116-DR-9
Thorium-228	600	4.4	116-C-5
Thorium-232	80	2	1607-H2
Uranium-233	3,000	5.8	1607-H2
Uranium-234	3,000	2,100	618-4
Uranium-235	3,000	110	316-2
Uranium-238	3,000	2,100	618-4

(a) Values are based on either a stochastic dose limit of 5 rem or a nonstochastic dose limit of 50 rem, whichever is more limiting (see DOE Order 5480.11).

(b) Soil concentration exceeds the specific activity of K-40 (7,000,000 pCi/g).

5480.11. Evaluation of effects of individual constituents at smaller doses provided input for determining the effects of cumulative doses.

Dose-based concentrations for the external exposure pathway account for the contribution of radioactive daughters assumed to be in secular equilibrium with their parent radionuclide constituents. The calculated dose-based concentrations do not account for attenuation of radionuclide concentrations through radioactive decay. The actual doses associated with sample data could vary substantially for some radionuclides depending on the time frame chosen for clean-up.

The sampled radionuclide constituent concentrations were compared to the calculated doses for the radionuclide constituents (Appendix J). The radionuclide constituents responsible for most of the doses were Cesium-137, Cobalt-60, Europium-152, and Europium-154. Uranium-238, Potassium-40, Radium-226, and Sodium-22 also contributed small quantities (20 to 50 mrem/yr) to the estimated dose.

The sites that are responsible for emitting doses of 50 mrem/yr or greater for individual radionuclide constituents are listed in Table 11. Sites with individual radionuclide constituents emitting 50 mrem/yr or more are listed because these sites typically accounted for cumulative doses over 100 mrem/yr to workers.

Table 11. Radionuclide Constituents of Concern for Occupational External Exposure.

Chemical Element	Sites with Radionuclide Constituents Emitting Over 50 mrem/yr	Sites with Radionuclide Constituents Emitting Over 250 mrem/yr
Cesium-137	116-C-5, 116-D-1A, 116-D-1B, 116-DR-1, 116-DR-2, 116-D-2A, 103-D(a)	116-C-5, 103-D(a)
Cobalt-60	316-1, 116-C-5, 116-N-2, 116-H-7, 116-DR-1	116-C-5, 116-N-2
Europium-152	116-B-1, 116-C-5, 116-H-1, 116-H-7, 116-D-1A, 116-D-1B, 116-DR-1	116-C-5, 116-H-7, 116-DR-1
Europium-154	116-C-5, 116-D-1A, 116-D-1B, 103-D(a)	116-C-5, 103-D(a)
Radium-226	116-D-1A	None

(a) This is a wipe sample and may not be a problem as related to occupational exposure limits.

Based on the evaluation of the inorganic and organic constituent levels, it was concluded that the main occupational health hazard associated with the contaminated waste involved external radiation exposure to workers. The extent of the external radiation doses was thoroughly investigated in the following analysis.

For the sampled waste sites, the doses from each constituent, emitting over 10 mrem/yr, were totaled to determine the cumulative dose for the waste site. Appendix K lists the sites that contain constituents with doses of 10 mrem/yr or more. The occupational year is based on a 5 hour per day average, 5 day per week, 50 week per year, occupational exposure time.

Each waste site was evaluated to determine the percent of the contaminated volume emitting over 250 mrem/yr and 1 rem/yr (1,000 mrem/yr).

The analysis was based on the number of sampled intervals containing the contamination, the level of contamination, the size of the intervals, and the total volume of the waste site. Waste sites and contaminated volumes emitting radionuclide doses are listed in Table 12.

Each of the waste sites in Table 12, has been assigned a concern rating based on the cumulative dose rate from all radionuclide constituents. Concern ratings of "None" indicate that the radionuclide constituents in the waste volume will produce a dose below 100 mrem/yr to occupational workers; a "Minimal" concern rating indicates that the site contains radionuclide constituents emitting a total dose of 100 mrem/yr to 249 mrem/yr; a "Low" concern rating indicates the constituents are emitting 250 mrem/yr to 499 mrem/yr; waste sites emitting 500 mrem/yr to 999 mrem/yr were considered to have a "Moderate" occupational safety concern; and a concern rating of "High" indicates that the radionuclide constituents contained in the waste sites have a potential for emitting over 1 rem/yr (1,000 mrem/yr) to workers during ERDF operations.

The total contaminated volume for the waste sites included in this section is approximately 6.0 million bank cubic meters (bm^3) (7.9 million bank cubic yards [byd^3]). The total volumes of waste emitting radiation doses over 250 rem/yr is approximately 361,000 bm^3 (473,000 byd^3) and the total volume expected to emit over 1 rem/yr (1000 mrem/yr) is approximately 71,000 bm^3 (93,000 byd^3).

Many of the contaminated sites were considered analogous to a waste site containing highly contaminated sludge. The sludge waste accounted for the only readings over 1 rem/yr (1,000 mrem/yr) for waste sites included in this section. Sludge may not be present at all waste sites that were considered analogous. For this reason, the highly contaminated waste volumes may be significantly overestimated. Each of the sites considered to be analogous to waste site 116-C-5 should be checked to confirm the presence of sludge type materials; the sites considered analogous to site 116-C-5 are indicated in Table 12.

Table 12. Contaminated Volumes for Sampled Waste Sites.

Operable Unit	Site Number	Total Contaminated Volume for Waste Site (byd^3)	Volume Over 250 mrem/yr (byd^3)	Volume Over 1 rem/yr (byd^3)	Occupational Concern Rating (d)
Environmental Restoration Waste Sites					
100-BC-1	116-B-1	7,661	0	0	Minimal
100-BC-1	116-B-2	4,829	0	0	None
100-BC-1	116-B-3	97	0	0	None
100-BC-1	116-B-4	34	0	0	None
100-BC-1	116-B-5	974	0	0	None
100-BC-1	116-B-6A	88	0	0	None
100-BC-1	116-B-6B	46	0	0	None
100-BC-1	116-B-7	435	0	0	None
100-BC-1	116-B-9	30	0	0	None
100-BC-1	116-B-10	55	0	0	None
100-BC-1	116-B-11(e)	376,768	39,937	12,057	High
100-BC-1	116-B-12	97	0	0	None
100-BC-1	116-B-13 (e)	1,014	107	32	High
100-BC-1	116-B-14 (e)	588	62	19	High
100-BC-1	116-B-15	1,541	244	0	Low
100-BC-1	116-B-16	69	0	0	None
100-BC-1	116-C-1	79,861	12,858	0	Low
100-BC-1	116-C-5	585,088	18,723	18,723	High
100-BC-1	120-B-1	97	0	0	None
100-BC-1	132-B-1	2,631	0	0	None
100-BC-1	132-B-4	2,301	345 (a)	0 (a)	Moderate
100-BC-1	132-B-5	7,404	1111 (a)	0 (a)	Moderate
100-BC-1	132-B-6	435	0	0	None
100-BC-1	132-C-2	836	0	0	None
100-BC-1	1607-B1	1,866	0	0	None
100-BC-1	1607-B2	6,673	0	0	None
100-BC-1	1607-B3	727	0	0	None
100-BC-1	1607-B4	165	0	0	None
100-BC-1	1607-B5	63	0	0	None
100-BC-1	1607-B6	387	0	0	None
100-BC-1	1607-B7	195	0	0	None
100-BC-2	116-C-2A	4,543	0	0	None
100-BC-2	116-C-2B	63	0	0	None
100-BC-2	116-C-2C	806	0	0	None
100-BC-2	116-C-6	489	77	0	Low
100-BC-2	132-C-3	2,301	345 (a)	0 (a)	Moderate
100-BC-2	1607-B8	184	0	0	None
100-BC-2	1607-B10	184	0	0	None
100-BC-2	1607-B11	63	0	0	None
100-BC-2	1607-B9	1,158	0	0	None
100-DR-1	116-D-1A	2,589	241	0	Low
100-DR-1	116-D-1B	1,173	185	0	Low
100-DR-1	116-D-2	97	0	0	None
100-DR-1	116-D-3	26	0	0	None
100-DR-1	116-D-4	26	0	0	None
100-DR-1	116-D-5	1,517	0	0	None

Table 12. Contaminated Volumes for Sampled Waste Sites (Continued).

Operable Unit	Site Number	Total Contaminated Volume for Waste Site (byd^3)	Volume Over 250 mrem/yr (byd^3)	Volume Over 1 rem/yr (byd^3)	Occupational Concern Rating (d)
100-DR-1	116-D-6	25	0	0	None
100-DR-1	116-D-7	374,385	0	0	None
100-DR-1	116-D-9	97	0	0	None
100-DR-1	116-D-10	331	52	0	Low
100-DR-1	116-DR-1	5,170	832	0	Low
100-DR-1	116-DR-2	2,685	0	0	Minimal
100-DR-1	116-DR-5	435	0	0	None
100-DR-1	116-DR-9	481,008	0	0	None
100-DR-1	120-D-1	20,359	0	0	None
100-DR-1	120-D-2	6,403	0	0	None
100-DR-1	126-D-3	79	0 (b)	0 (b)	None
100-DR-1	130-D-1	77	0	0	None
100-DR-1	132-D-1	7,317	1098 (a)	0 (a)	Moderate
100-DR-1	132-D-2	1,770	266 (a)	0 (a)	Moderate
100-DR-1	132-D-3	618	0	0	None
100-DR-1	1607-D2	8,196	0	0	None
100-DR-1	1607-D4	106	0	0	None
100-DR-1	1607-D5	106	0	0	None
100-DR-2	116-DR-3	955	151	0	Low
100-DR-2	116-DR-4	116	0	0	None
100-DR-2	116-DR-6	427	0	0	None
100-DR-2	116-DR-7	42	0	0	None
100-DR-2	116-DR-8	97	0	0	None
100-DR-2	132-DR-1	474	0	0	None
100-DR-2	1607-D3	165	0	0	None
100-DR-3	1607-D1	1,866	0	0	None
100-DR-3	600-30	31,111	0 (b)	0 (b)	None
100-DR-3	116-DR-10	1,073	170	0	Low
100-FR-1	116-F-1	35,691	5,746	0	Low
100-FR-1	116-F-2	5,543	892	0	Low
100-FR-1	116-F-3	1,302	206	0	Low
100-FR-1	116-F-4	97	0	0	None
100-FR-1	116-F-5	97	0	0	None
100-FR-1	116-F-6	7,389	0	0	None
100-FR-1	116-F-7	34	0	0	None
100-FR-1	116-F-8	491	0	0	None
100-FR-1	116-F-9	3,729	559 (a)	0 (a)	Moderate
100-FR-1	116-F-10	31	0	0	None
100-FR-1	116-F-11	25	0	0	None
100-FR-1	116-F-12	26	0	0	None
100-FR-1	116-F-13	25	0	0	None
100-FR-1	116-F-14 (e)	360,756	38,240	11,544	High
100-FR-1	116-F-15	97	15 (a)	0 (a)	Moderate
100-FR-1	116-F-16	380	0	0	None
100-FR-1	126-F-2	88,621	0 (c)	0 (c)	None
100-FR-1	128-F-2	6,917	0	0	None

Table 12. Contaminated Volumes for Sampled Waste Sites (Continued).

Operable Unit	Site Number	Total Contaminated Volume for Waste Site (byd^3)	Volume Over 250 mrem/yr (byd^3)	Volume Over 1 rem/yr (byd^3)	Occupational Concern Rating (d)
100-FR-1	132-F-3	9,147	0	0	None
100-FR-1	132-F-5	2,727	409 (a)	0 (a)	Moderate
100-FR-1	132-F-6	1,273	0	0	None
100-FR-1	1607-F2	7,738	0	0	None
100-FR-1	1607-F3	624	0	0	None
100-FR-1	1607-F4	106	0	0	None
100-FR-1	1607-F5	106	0	0	None
100-FR-1	1607-F6	624	0	0	None
100-FR-2	120-F-1	109	0 (b)	0 (b)	None
100-FR-2	126-F-1	40,914	0	0	None
100-FR-2	128-F-1	4,494	0	0	None
100-FR-2	128-F-3	7,389	0	0	None
100-FR-2	600-31	2,948	0 (b)	0 (b)	None
100-FR-2	1607-F1	1,866	0	0	None
100-FR-1	UPR-100-F-1	421	63 (a)	0 (a)	Moderate
100-HR-1	116-H-1	4,965	0	0	None
100-HR-1	116-H-2	9,436	0	0	None
100-HR-1	116-H-3	170	0	0	None
100-HR-1	116-H-4	28	4 (a)	0 (a)	Moderate
100-HR-1	116-H-5	435	0	0	None
100-HR-1	116-H-6 (e)	6,410	680	205	High
100-HR-1	116-H-7	570,936	60,519	0	Low
100-HR-1	116-H-9	60	0	0	None
100-HR-1	126-H-2	88,621	0	0	None
100-HR-1	132-H-3	1,788	0	0	None
100-HR-1	1607-H2	624	0	0	None
100-HR-1	1607-H4	106	0	0	None
100-HR-2	126-H-1	40,914	0	0	None
100-HR-2	128-H-1	4,494	0	0	None
100-HR-2	128-H-2	4,346	0	0	None
100-HR-2	128-H-3	4,346	0	0	None
100-HR-2	132-H-2	3,068	460 (a)	0 (a)	Moderate
100-HR-2	1607-H1	624	0	0	None
100-HR-2	1607-H3	1,496	0	0	None
100-IU-2	White Bluffs Landfill	3,012	0 (b)	0 (b)	None
100-IU-2	East White Bluffs City Landfill	4,494	0 (b)	0 (b)	None
100-IU-2	600-5	13	0 (c)	0 (c)	None
100-KR-1	116-K-1	50,330	8,103	0	Low
100-KR-1	116-K-2	87,505	13126 (a)	0 (a)	Moderate
100-KR-1	116-K-3	1,051	0	0	None
100-KR-1	116-KE-4 (e)	763,934	80,977	24,446	High
100-KR-1	116-KW-3 (e)	763,934	80,977	24,446	High
100-KR-2	116-KE-1	497	0	0	None
100-KR-2	116-KE-2	409	0	0	None
100-KR-2	116-KE-3	121	19	0	Low
100-KR-2	116-KW-1	497	0	0	Low

Table 12. Contaminated Volumes for Sampled Waste Sites (Continued).

Operable Unit	Site Number	Total Contaminated Volume for Waste Site (byd^3)	Volume Over 250 mrem/yr (byd^3)	Volume Over 1 rem/yr (byd^3)	Occupational Concern Rating (d)
100-KR-2	116-KW-2	121	19	0	Low
100-KR-2	120-KE-8	133	0 (b)	0 (b)	None
100-KR-2	120-KW-6	133	0 (b)	0 (b)	None
100-KR-2	126-K-1	76,321	0 (b)	0 (b)	None
100-KR-2	130-K-1	148	0	0	None
100-KR-2	130-K-2	84	0	0	None
100-KR-2	130-KE-1	56	0	0	None
100-KR-2	130-KE-2	56	0	0	None
100-KR-2	130-KW-1	56	0	0	None
100-KR-2	130-KW-2	56	0	0	None
100-KR-2	1607-K4	239	0	0	None
100-KR-2	1607-K6	239	0	0	None
100-KR-2	UPR-100-K-1	2,144	339	0	Low
100-KR-3	120-KE-1	30	0	0	None
100-KR-3	120-KE-2	25	0	0	None
100-KR-3	120-KE-3	64	0	0	None
100-KR-3	120-KE-6	97	0	0	None
100-KR-3	120-KE-9	287	0 (b)	0 (b)	None
100-KR-3	120-KW-1	30	0	0	None
100-KR-3	120-KW-2	25	0	0	None
100-KR-3	120-KW-5	97	0	0	None
100-KR-3	120-KW-7	287	0 (b)	0 (b)	None
100-KR-3	128-K-1	4,494	0	0	None
100-KR-3	128-K-2	182,321	0	0	None
100-KR-3	130-K-3	196	0	0	None
100-KR-3	600-4	8,106	0 (c)	0 (c)	None
100-KR-3	600-29	74,334	0 (b)	0 (b)	None
100-KR-3	1607-K1	239	0	0	None
100-KR-3	1607-K2	165	0	0	None
100-KR-3	1607-K3	239	0	0	None
100-KR-3	1607-K5	313	0	0	None
100-NR-1	116-N-1	47,127	0	0	None
100-NR-1	116-N-2	97	22	0	Low
100-NR-1	116-N-3	41,309	0	0	None
100-NR-1	116-N-4	2,231	0	0	None
100-NR-1	118-N-1	495	74 (a)	74 (a)	High
100-NR-1	120-N-1	10,731	0	0	None
100-NR-1	120-N-2	2,021	0	0	None
100-NR-1	120-N-3	30	0	0	None
100-NR-1	120-N-5	30	0	0	None
100-NR-1	120-N-6	30	0	0	None
100-NR-1	120-N-7	30	0	0	None
100-NR-1	120-N-8	30	0	0	None
100-NR-1	124-N-1	609	0	0	None
100-NR-1	124-N-2	102	0	0	None
100-NR-1	124-N-3	30	0	0	None

Table 12. Contaminated Volumes for Sampled Waste Sites (Continued).

Operable Unit	Site Number	Total Contaminated Volume for Waste Site (byd^3)	Volume Over 250 mrem/yr (byd^3)	Volume Over 1 rem/yr (byd^3)	Occupational Concern Rating (d)
100-NR-1	124-N-4	12,695	0	0	None
100-NR-1	124-N-5	1,624	0	0	None
100-NR-1	124-N-6	494	0	0	None
100-NR-1	124-N-7	2,215	0	0	None
100-NR-1	124-N-8	398	0	0	None
100-NR-1	124-N-9	947	0	0	None
100-NR-1	124-N-10	24,774	0	0	None
100-NR-1	128-N-1	40,914	0	0	None
100-NR-1	130-N-1	31,960	0	0	None
100-NR-1	600-32	103,956	0 (b)	0 (b)	None
100-NR-1	600-35	151,603	0 (b)	0 (b)	None
100-NR-1	UPR-100-N-1	76	0	0	None
100-NR-1	UPR-100-N-2	115	0	0	None
100-NR-1	UPR-100-N-3	28	0	0	None
100-NR-1	UPR-100-N-4	404	0	0	None
100-NR-1	UPR-100-N-5	107	24	0	None
100-NR-1	UPR-100-N-6	107	0	0	None
100-NR-1	UPR-100-N-7	107	0	0	None
100-NR-1	UPR-100-N-8	32	0	0	None
100-NR-1	UPR-100-N-9	107	0	0	None
100-NR-1	UPR-100-N-10	60	0	0	None
100-NR-1	UPR-100-N-11	9	0	0	None
100-NR-1	UPR-100-N-12	22	0	0	None
100-NR-1	UPR-100-N-13	4	0	0	None
100-NR-1	UPR-100-N-14	237	0	0	None
100-NR-1	UPR-100-N-15	42	0	0	None
100-NR-1	UPR-100-N-17	107	0	0	None
100-NR-1	UPR-100-N-18	107	0	0	None
100-NR-1	UPR-100-N-19	107	0	0	None
100-NR-1	UPR-100-N-20	107	0	0	None
100-NR-1	UPR-100-N-21	107	0	0	None
100-NR-1	UPR-100-N-22	107	0	0	None
100-NR-1	UPR-100-N-23	107	0	0	None
100-NR-1	UPR-100-N-24	107	0	0	None
100-NR-1	UPR-100-N-25	107	0	0	None
100-NR-1	UPR-100-N-26	107	0	0	None
100-NR-1	UPR-100-N-29	83	0	0	None
100-NR-1	UPR-100-N-30	616	0	0	None
100-NR-1	UPR-100-N-31	514	0	0	None
100-NR-1	UPR-100-N-32	107	0	0	None
100-NR-1	UPR-100-N-33	107	0	0	None
100-NR-1	UPR-100-N-34	107	0	0	None
100-NR-1	UPR-100-N-35	107	0	0	None
100-NR-1	UPR-600-17	107	0	0	None
300-FF-1	Process Sewer System	2,882	0	0	Minimal
300-FF-1	Ash Pits	0	0	0	None

Table 12. Contaminated Volumes for Sampled Waste Sites (Continued).

Operable Unit	Site Number	Total Contaminated Volume for Waste Site (byd^3)	Volume Over 250 mrem/yr (byd^3)	Volume Over 1 rem/yr (byd^3)	Occupational Concern Rating (d)
300-FF-1	Filter Backwash Ponds	0	0	0	None
300-FF-1	Retired Filter Backwash Ponds	0	0	0	None
300-FF-1	Sanitary Sewer System	62,142	0	0	None
300-FF-1	316-1	224,629	0	0	Minimal
300-FF-1	316-2	305,303	0	0	None
300-FF-1	316-5	23,747	0	0	None
300-FF-1	618-4	69,667	0	0	None
300-FF-1	618-5	3,000	0	0	None
300-FF-1	618-12	23,747	0	0	Minimal
300-FF-2	Vitrification Test Sites	0	0 (b)	0 (b)	None
300-FF-2	600-22	786	0 (b)	0 (b)	None
300-FF-2	618-1	10,064	0	0	None
300-FF-2	618-2	11,300	0	0	None
300-FF-2	618-3	36,542	0	0	None
300-FF-2	618-7	239,108	0	0	None
300-FF-2	618-8	11,667	0	0	None
300-FF-2	618-9	2,333	0	0	None
300-FF-2	618-13	5,034	0	0	None
300-FF-3	RLWS & 340 Complex	1,881	0	0	Minimal
300-FF-3	Retired Rad. Liquid Waste Sewer	7,587	0	0	Minimal
300-FF-3	300-1	114	0 (b)	0 (b)	None
300-FF-3	307 Retention Basin	720	0	0	None
300-FF-3	315 Retired Sanitary Drain Field	1,866	0	0	None
300-FF-3	307 Disposal Trench, 316-3	13,972	0	0	None
300-FF-3	331 LSL Drain Field	63	0	0	None
300-FF-3	331 LSL Trench 1	83	0	0	None
300-FF-3	331 LSL Trench 2	83	0	0	None
300-FF-3	335 and 336 Retired Sanitary Drain Fields	1,866	0	0	None
300-FF-3	Biological Treatment Test Facility	0	0 (a)	0 (a)	Minimal
300-FF-3	Physical and Chemical Treatment Test Facilities	0	0 (a)	0 (a)	Minimal
300-FF-3	Thermal Treatment Test Facilities	0	0 (a)	0 (a)	Minimal
300-FF-3	UPR-300-1	2,073	0	0	Minimal
300-FF-3	UPR-300-2	126	0 (a)	0 (a)	Minimal
300-FF-3	UPR-300-4	12,741	1911 (a)	0 (a)	Moderate
300-FF-3	UPR-300-5	126	0 (a)	0 (a)	Minimal
300-FF-3	UPR-300-7	126	0	0	None
300-FF-3	UPR-300-10	126	0	0	Minimal
300-FF-3	UPR-300-11	53	0	0	Minimal
300-FF-3	UPR-300-12	78	0	0	Minimal
300-FF-3	UPR-300-13	126	0 (a)	0 (a)	Minimal
300-FF-3	UPR-300-14	126	0 (b)	0 (b)	None
300-FF-3	UPR-300-17	126	19 (a)	0 (a)	Moderate

Table 12. Contaminated Volumes for Sampled Waste Sites (Continued).

Operable Unit	Site Number	Total Contaminated Volume for Waste Site (byd^3)	Volume Over 250 mrem/yr (byd^3)	Volume Over 1 rem/yr (byd^3)	Occupational Concern Rating (d)
300-FF-3	UPR-300-18	126	0 (a)	0 (a)	Minimal
300-FF-3	UPR-300-39	126	0 (a)	0 (a)	Minimal
300-FF-3	UPR-300-40	126	0 (a)	0 (a)	Minimal
300-FF-3	UPR-300-41	32	0 (a)	0 (a)	Minimal
300-FF-3	UPR-300-42	126	0	0	None
300-FF-3	UPR-300-43	131	0 (b)	0 (b)	None
300-FF-3	UPR-300-44	131	0 (a)	0 (a)	Minimal
300-FF-3	UPR-300-45	131	0 (a)	0 (a)	Minimal
300-FF-3	UPR-300-46	131	0 (a)	0 (a)	Minimal
300-FF-4	400-1	801	0 (c)	0 (c)	None
300-FF-4	400 Area French Drain 10	28	0	0	None
300-FF-4	400 Area French Drain 10A	28	0	0	None
300-FF-4	400 Area French Drain 1A	28	0	0	None
300-FF-4	400 Area French Drain 1B	28	0	0	None
300-FF-4	400 Area French Drain 2	28	0	0	None
300-FF-4	400 Area French Drain 3	28	0	0	None
300-FF-4	400 Area French Drain 4	28	0	0	None
300-FF-4	400 Area French Drain 5	28	0	0	None
300-FF-4	400 Area French Drain 6	28	0	0	None
300-FF-4	400 Area French Drain 7	28	0	0	None
300-FF-4	400 Area French Drain 8	28	0	0	None
300-FF-4	400 Area French Drain 9	28	0	0	None
300-FF-4	400 Area Retired French Drains	28	0	0	None
300-FF-4	403 French Drain	28	0	0	None
300-FF-4	4713-B French Drain	28	0	0	None
300-FF-4	4721 French Drain	28	0	0	None
300-FF-4	4722-B French Drain	28	0	0	None
300-FF-4	4722-C French Drain	28	0	0	Minimal
300-FF-4	400 Area Sanitary Sewer	6,348	0	0	None
300-FF-4	400 Area Sanitary Tile Field	1,866	0	0	None
300-FF-4	400 Area Retired Septic Tanks	1,866	0	0	None
300-FF-4	400 Area Process Pond and Sewer System	556	0	0	Minimal
300-FF-4	400 Area Retired Sanitary Pond	491	0	0	None
300-FF-4	400 Area Sand Bottom Trench	251	0	0	None
300-FF-4	UPR-400-1	126	0 (b)	0 (b)	None
300-IU-1	316-4	105	0	0	None
300-IU-1	600-1	298	0 (b)	0 (b)	None
	Subtotal	**6,976,346**	**370,208**	**91,546**	
	Non Environmental Restoration Waste Sites				
100-BC-1	118-B-9	107	0	0	None
100-BC-1	600-34	133,333	0 (c)	0 (c)	None
100-BC-2	118-C-4	556	83 (a)	83 (a)	High
100-DR-1	108-D	6,397	0	0	None
100-DR-1	Sodium Dichromate Tanks	167	0	0	None
100-DR-1	103-D	1,444	1444 (f)	1444 (f)	High

Table 12. Contaminated Volumes for Sampled Waste Sites (Continued).

Operable Unit	Site Number	Total Contaminated Volume for Waste Site (byd^3)	Volume Over 250 mrem/yr (byd^3)	Volume Over 1 rem/yr (byd^3)	Occupational Concern Rating (d)
300-FF-3	333 East Side HWSA	2,300	0	0	None
300-FF-3	333 East Side Heat Treat Salt Storage Area	1,852	0	0	None
300-FF-3	333 Laydown HWSA	1,356	0	0	None
300-FF-3	334 Tank Farm Waste Acid Storage Tank	486	73 (a)	0 (a)	Moderate
300-FF-3	334-A-TK-B	486	0 (b)	0 (b)	None
300-FF-3	334-A-TK-C	486	0 (b)	0 (b)	None
300-FF-3	350 HWSA	939	0	0	None
300-FF-3	3712 Uranium Scrap Storage Area	1,852	0	0	None
300-FF-3	3718-F Burn Shed	296	0	0	None
300-FF-3	3718-F Storage Facility	296	0	0	None
300-FF-3	3718-F Treatment Tank 1	1,134	0 (b)	0 (b)	None
300-FF-3	3718-F Treatment Tank 2	1,134	0 (b)	0 (b)	None
300-FF-3	3746-D Silver Recovery	74	0	0	None
300-FF-3	UPR-300-38	1,095	0 (a)	0 (a)	Minimal
300-FF-4	427 HWSA	2,300	0	0	None
300-FF-4	437 MASF	6,921	0	0	None
300-FF-4	4713-B HWSA	2,300	0	0	None
300-FF-4	4722 Paint Shop HWSA	2,300	0	0	None
300-FF-4	4831 Laydown HWSA	2,300	0	0	None
300-FF-4	4843	1,185	0	0	None
300-IU-1	600-21	37,975	0 (c)	0 (c)	None
300-IU-1	600-23	490,292	73544 (a)	0 (a)	Moderate
	Subtotal	**947,418**	**102,385**	**1,694**	
Other Waste Sites					
100-BC-1	118-B-8	Reactor Building			N/A
100-BC-2	118-C-3	Reactor Building			N/A
100-DR-1	118-D-6	Reactor Building			N/A
100-DR-2	118-DR-2	Reactor Building			N/A
100-FR-1	118-F-8	Reactor Building			N/A
100-HR-1	118-H-6	Reactor Building			N/A
100-KR-2	118-KE-1	Reactor Building			N/A
100-KR-2	118-KW-1	Reactor Building			N/A
100-KR-2	116-KE-6A	Clean			None
100-KR-2	116-KE-6B	Clean			None
100-KR-2	116-KE-6C	Clean			None
100-KR-2	116-KE-6D	Clean			None
100-NR-1	116-N-8	Clean			None
100-NR-1	120-N-4	Clean			None
300-FF-1	UPR-300-8	To Process Sewer System			None
300-FF-1	UPR-300-9	To Process Sewer System			None
300-FF-1	UPR-300-15	To Process Sewer System			None
300-FF-1	UPR-300-19	To Process Sewer System			None
300-FF-1	UPR-300-20	To Process Sewer System			None

Table 12. Contaminated Volumes for Sampled Waste Sites (Continued).

Operable Unit	Site Number	Total Contaminated Volume for Waste Site (byd^3)	Volume Over 250 mrem/yr (byd^3)	Volume Over 1 rem/yr (byd^3)	Occupational Concern Rating (d)
100-DR-2	116-D-8	2,300	0	0	None
100-DR-2	122-DR-1	3,833	0 (b)	0 (b)	None
100-HR-1	Electrical Facility	11,574	0 (b)	0 (b)	None
100-KR-2	116-KE-5	415	0	0	None
100-KR-2	116-KW-4	415	0	0	None
100-KR-2	118-KE-2	556	83 (a)	83 (a)	High
100-KR-2	118-KW-2	556	83 (a)	83 (a)	High
100-KR-3	120-KE-4	139	0	0	None
100-KR-3	120-KE-5	139	0	0	None
100-KR-3	120-KW-3	139	0	0	None
100-KR-3	120-KW-4	139	0	0	None
100-KR-3	126-KE-2	889	0 (c)	0 (c)	None
100-KR-3	126-KE-3	889	0 (c)	0 (c)	None
300-FF-1	322 Hazardous Waste Staging Area	2,300	0	0	None
300-FF-1	340 Complex HWSA	2,300	0	0	None
300-FF-1	628-4	3,000	0	0	None
300-FF-1	UPR-300-FF-1	167,517	25128 (a)	0 (a)	Moderate
300-FF-2	Solvent Evaporator	129	19 (a)	0 (a)	Moderate
300-FF-3	Interim Filter Backwash Disposal	347	0 (c)	0 (c)	None
300-FF-3	Powerhouse HWSA	1,760	0	0	None
300-FF-3	303-K Contamination Waste Storage	1,609	0	0	None
300-FF-3	303-M Storage Area	1,760	0	0	None
300-FF-3	303-M Uranium Oxide Facility	12,245	0	0	None
300-FF-3	304 Concretion Facility	3,912	0	0	None
300-FF-3	304 Storage Facility	1,852	0	0	None
300-FF-3	305-B Storage Facility	3,912	0	0	None
300-FF-3	309-WS-1	1,991	299 (a)	0 (a)	Moderate
300-FF-3	309-WS-2	987	148 (a)	0 (a)	Moderate
300-FF-3	311-TK-40	681	102 (a)	0 (a)	Moderate
300-FF-3	311-TK-50	0	0 (a)	0 (a)	Moderate
300-FF-3	313 Centrifuge	37	6 (a)	0 (a)	Moderate
300-FF-3	313 Copper Remelt Operations	3,912	0	0	None
300-FF-3	313 East Side Storage Pad	516	0	0	None
300-FF-3	313 Filter Press	37	6 (a)	0 (a)	Moderate
300-FF-3	313-TK-2	681	102 (a)	0 (a)	Moderate
300-FF-3	313 Uranium Recovery Operations	1,022	153 (a)	0 (a)	Moderate
300-FF-3	323 Tank 1	875	131 (a)	0 (a)	Moderate
300-FF-3	323 Tank 2	875	131 (a)	0 (a)	Moderate
300-FF-3	323 Tank 3	875	131 (a)	0 (a)	Moderate
300-FF-3	323 Tank 4	875	131 (a)	0 (a)	Moderate
300-FF-3	324 Sodium Removal Pilot Plant	1,852	0 (b)	0 (b)	None
300-FF-3	325 Waste Treatment Facility	3,912	587 (a)	0 (a)	Moderate
300-FF-3	331-C HWSA	2,300	0	0	None

Table 12. Contaminated Volumes for Sampled Waste Sites (Continued).

Operable Unit	Site Number	Total Contaminated Volume for Waste Site (byd^3)	Volume Over 250 mrem/yr (byd^3)	Volume Over 1 rem/yr (byd^3)	Occupational Concern Rating (d)
300-FF-1	UPR-300-21	To Process Trench			None
300-FF-1	UPR-300-22	To Process Trench			None
300-FF-1	UPR-300-23	To Process Trench			None
300-FF-1	UPR-300-24	To Process Trench			None
300-FF-1	UPR-300-25	To Process Trench			None
300-FF-1	UPR-300-26	To Process Trench			None
300-FF-1	UPR-300-27	To Process Sewer System			None
300-FF-1	UPR-300-28	To Process Trench			None
300-FF-1	UPR-300-29	To Process Trench			None
300-FF-1	UPR-300-30	To Process Trench			None
300-FF-1	UPR-300-31	To Process Sewer System			None
300-FF-1	UPR-300-32	To Process Trench			None
300-FF-1	UPR-300-33	To Process Trench			None
300-FF-1	UPR-300-34	To 316-12 and 316-2			None
300-FF-1	UPR-300-35	To 316-12 and 316-2			None
300-FF-1	UPR-300-36	To 316-12 and 316-2			None
300-FF-1	UPR-300-37	To 316-12 and 316-2			None
300-FF-1	UPR-600-15	To 218-W-3A			None
300-FF-3	311 Methanol Tank 1	Clean			None
300-FF-3	311 Methanol Tank 2	Clean			None
300-FF-3	313 Methanol Tank	Clean			None
300-FF-3	333-TK-7	Clean			None
300-FF-3	333-TK-11	Clean			None
300-FF-3	333 West Side Waste Oil Tank	Clean			None
300-FF-3	3713 Paint Shop HWSA	Clean			None
300-FF-3	3713 Sign Shop HWSA	Clean			None
	Summary				
	Total Volume (byd^3)	7,923,763	472,594	93,240	
	Total Volume (bm^3)	6,058,385	361,338	71,289	

(a) There was no field investigation or reference site for this waste site. Based on the WIDS database, there is a potential for radionuclide contamination, levels unknown.
(b) There was no field investigation or reference site for this waste site. Based on the WIDS database, there is a potential for non-radioactive, hazardous contamination, levels unknown.
(c) There was no field investigation or reference for this waste site. Based on the WIDS database, there is no potential of contamination by either hazardous or radionuclide constituents .
(d) Occupational Concern Ratings: 0 - 99 mrem/yr = None, 100-249 mrem/yr = Minimal, 250-499 mrem/yr = Low, 500-999 mrem/yr = Moderate, more than 1000 mrem/yr = High
(e) The contaminated volumes for these sites were based on waste site 116-C-5. Waste site 116-C-5 contained highly contaminated sludge and each site analogous to this site was assumed to also contain sludge. If the waste sites do not have sludge, the level of contamination and concern rating will be significantly less.
(f) The sampling at this waste site included wipe samples of the walls in the facilities. The wipe samples showed high levels of contamination, but these levels are not necessarily representative of the concentrations within the volume.

6.0 OCCUPATIONAL HEALTH EVALUATION FOR BURIAL GROUNDS

Burial ground sites are more difficult to characterize than the previously discussed waste sites because in addition to contaminated soils, burial grounds contain a variety of radioactively contaminated and activated debris. Due to the variety of debris, it is difficult to sample and predict doses associated with these waste sites.

There are seven primary burial grounds in the 100 Area and 300 Area operable units. There are also many non-primary burial grounds, as well as unplanned releases associated with operations at burial grounds. The waste materials in these sites were treated as burial grounds due to the lack of additional information. These burial grounds and unplanned releases, along with the assumed concern ratings are listed in Table 13.

This section does not include discussion of burial ground sites 618-1, 618-2, 618-3, 618-4, 618-5, 618-7, 618-8, 618-9, or 618-13. There is investigation data for burial grounds 618-4 and 618-5; the others are considered analogous to these two burial grounds. These sites are included in the Section 5.0 analysis.

Since there is no sample data available for the burial ground sites included in this section, the *Estimates of Solid Waste Buried in the 100 Area Burial Grounds* (WHC 1987) was closely examined to develop a general understanding of the debris expected to be encountered. In addition to examining this study, telephone conversations and inspector logs of the 105-B burial ground (WIDS site 118-B-1) were used to develop a general overview of the type of waste materials present in all of the burial grounds.

6.1 OVERVIEW OF PRIMARY BURIAL GROUNDS

The 100 Area has seven primary burial grounds that were used for routine reactor operations. These burial grounds contain the majority of the waste from routine reactor operations. From information provided in the *Estimates of Solid Waste Buried in 100 Waste Burial Grounds* (WHC 1987), it was estimated that 59 percent by weight of debris is metal and 99.9 percent of this debris is larger than 15 centimeters (cm) (6 inches). Approximately 75 percent by volume and 41 percent by weight is soft waste. Soft waste includes plastic, paper, and clothing packaged in cardboard cartons.

6.1.1 118-B-1 (Alias 105-B) Burial Ground

A breakdown of the materials estimated to be in the 105-B burial ground, as indicated from the log book, is shown in Appendix L. The majority of this information was obtained from the following documents:

- *Estimates of Solid Waste Buried in 100 Waste Burial Grounds* (WHC 1987)
- *Engineering Study for the Conveyor and Area Fill Systems for the Environmental Restoration Disposal Facility* (DOE/RL 1993)
- *Summary of 100-B/C Reactor Operations and Resultant Wastes, Hanford Site* (WHC 1993b).

Table 13. Burial Ground Contaminated Volumes.

Operable Unit	Site Number	Total Contaminated Volume for Waste Site (byd³)	Maximum Volume Over 250 mrem/yr (byd³)	Maximum Volume Over 1 rem/yr (byd³)	Maximum Volume Over 5 rem/yr (byd³)	Maximum Volume Over 10 rem/yr (byd³)	Occupational Concern Rating (c)
Environmental Restoration Waste Sites							
100-BC-1	118-B-5	3,728	1,974	494	99	50	High
100-BC-1	118-B-7	82	82	82	71	50	High
100-BC-1	118-B-10	2,013	1,974	494	99	50	High
100-BC-1	126-B-1	67,265	1,974	494	99	50	High
100-BC-1	126-B-2	82,500	1,974	494	99	50	High
100-BC-1	126-B-3	57,241	1,974	494	99	50	High
100-BC-1	126-B-4	0	0	0	0	0	None
100-BC-1	128-B-1	4,494	1,974	494	99	50	High
100-BC-1	128-B-2	17,506	1,974	494	99	50	High
100-BC-1	128-B-3	27,951	1,974	494	99	50	High
100-BC-1	128-C-1	26,414	1,974	494	99	50	High (a)
100-BC-1	132-B-3	201	201	201	99	50	High (a)
100-BC-2	116-C-3	134	134	134	99	50	High (a)
100-BC-2	118-C-2	5	5	5	5	4	High (a)
100-BC-2	132-C-1	332	332	332	99	50	High (a)
100-BC-2	118-B-2	1,049	1,049	494	99	50	High
100-BC-2	118-B-3	80,951	1,974	494	99	50	High
100-BC-2	118-B-4	94	94	94	82	50	High
100-BC-2	118-B-6	38	38	38	33	27	High
100-BC-2	118-B-1 (d)	88,081	88,081	88,081	76,414	62,123	Very High
100-BC-2	118-C-1 (d)	62,074	62,074	62,074	53,852	43,781	Very High
100-DR-1	126-D-1	34,915	1,974	494	99	50	High (a)
100-DR-1	126-D-2	76,321	1,974	494	99	50	High (a)
100-DR-1	128-D-2	50,173	1,974	494	99	50	High (a)
100-DR-1	628-3	4,827	1,974	494	99	50	High (a)
100-DR-2	118-D-5	1,136	1,136	494	99	50	High
100-DR-2	126-D-1	25,128	1,974	494	99	50	High (a)
100-DR-3	118-D-1	137,617	1,974	494	99	50	High
100-DR-3	118-D-2 (d)	107,086	107,086	107,086	92,903	75,528	Very High
100-DR-3	118-D-3 (d)	79,407	79,407	79,407	68,890	56,006	Very High
100-DR-3	118-D-4	43,457	1,974	494	99	50	High
100-DR-3	118-DR-1	7,042	1,974	494	99	50	High
100-DR-3	128-D-1	4,494	1,974	494	99	50	High (a)
100-FR-1	132-F-4	550	550	494	99	50	High
100-FR-2	118-F-1 (d)	76,642	76,642	76,642	66,491	54,055	Very High
100-FR-2	118-F-2	40,494	1,974	494	99	50	High

Table 13. Burial Ground Contaminated Volumes (Continued).

Operable Unit	Site Number	Total Contaminated Volume for Waste Site (byd^3)	Volume Over 250 mrem/yr (byd^3)	Volume Over 1 rem/yr (byd^3)	Volume Over 5 rem/yr (byd^3)	Volume Over 10 rem/yr (byd^3)	Occupational Concern Rating (c)
100-FR-2	118-F-3	6,903	1,974	494	99	50	High
100-FR-2	118-F-4	451	99	25	5	3	High
100-FR-2	118-F-5	18,222	73	18	4	2	High
100-FR-2	118-F-6	68,543	73	18	4	2	High
100-FR-2	118-F-7	151	151	151	99	50	High
100-FR-2	118-F-9	6,395	1,974	494	99	50	High
100-HR-1	132-H-1	367	367	367	99	50	High (a)
100-HR-2	118-H-1 (d)	86,222	86,222	86,222	74,802	60,812	Very High
100-HR-2	118-H-2	3,056	1,974	494	99	50	High
100-HR-2	118-H-3	52,247	1,974	494	99	50	High
100-HR-2	118-H-4	2,383	1,974	494	99	50	High
100-HR-2	118-H-5	1,210	1,210	494	99	50	High
100-IU-2	628-1	4,827	1,974	494	99	50	High (a)
100-IU-2	JA JONES 2	1,167	1,167	494	99	50	High
100-KR-2	118-K-1 (d)	259,259	259,259	259,259	224,920	182,855	Very High
300-FF-3	309-TW-1	50	50	50	43	35	High (a)
300-FF-3	309-TW-2	51	51	51	44	36	High (a)
300-FF-3	309-TW-3	41	41	41	36	29	High (a)
300-FF-3	618-6	0	0	0	0	0	None
300-IU-1	618-10	135,723	1,974	494	99	50	High
300-IU-1	618-11	99,530	1,974	494	99	50	High
300-IU-1	JA JONES 1	2,457	0	0	0	0	None
	Subtotal	**1,960,695**	**820,945**	**776,679**	**662,361**	**537,297**	
Other Burial Ground Materials							
300-IU-1	UPR-600-1	1,111	1,111	494	99	50	High (b)
300-IU-1	UPR-600-2	1	1	1	1	1	High (b)
300-IU-1	UPR-600-3	22	22	22	19	16	High (b)
300-IU-1	UPR-600-4	45	45	45	39	32	High (b)
300-IU-1	UPR-600-5	75	75	75	65	53	High (b)
300-IU-1	UPR-600-6	59	59	59	51	42	High (b)
300-IU-1	UPR-600-7	8	8	8	7	6	High (b)
300-IU-1	UPR-600-8	1	1	1	1	1	High (b)
300-IU-1	UPR-600-9	12,500	1,974	494	99	50	High (b)
300-IU-1	UPR-600-10	15	15	15	13	10	High (b)
300-IU-1	UPR-600-11	0	0	0	0	0	None (b)
	Subtotal	**13,838**	**3,312**	**1,215**	**395**	**260**	

Table 13. Burial Ground Contaminated Volumes (Continued).

Operable Unit	Site Number	Total Contaminated Volume for Waste Site (byd^3)	Volume Over 250 mrem/yr (byd^3)	Volume Over 1 rem/yr (byd^3)	Volume Over 5 rem/yr (byd^3)	Volume Over 10 rem/yr (byd^3)	Occupational Concern Rating (c)
Non-ER Burial Ground Waste Sites							
100-BC-1	132-B-2	332	332	332	99	50	High (b)
100-BC-2	600-33	178	178	178	99	50	High (b)
100-DR-1	132-D-4	332	332	332	99	50	High (b)
100-DR-2	132-DR-2	332	332	332	99	50	High (b)
100-KR-2	132-KE-1	497	497	494	99	50	High (b)
100-KR-2	132-KW-1	497	497	494	99	50	High (b)
	Subtotal	**2,168**	**2,168**	**2,162**	**594**	**300**	
Summary							
Total Volume(byd^3)		**1,976,702**	**826,425**	**780,056**	**663,350**	**537,857**	
Total Volume (bm^3)		**1,511,305**	**631,851**	**596,399**	**507,170**	**411,224**	

(a) These sites are not listed in WIDS as burial grounds, but are assumed to be burial grounds in WHC Volume Estimates.

(b) These sites are assumed to be analogous to burial ground materials because they are associated with burial grounds.

(c) Occupational Concern Ratings: 0 - 99 mrem/yr = None, 100-249 mrem/yr = Minimal, 250-499 mrem/yr = Low, 500-999 mrem/yr = Moderate, more than 1000 mrem/yr = High

(d) This waste site is one of the seven primary burial ground; the seven primary burial grounds pose the greatest occupational hazard for workers and therefore have been assigned a "Very High" concern rating.

The following discussion summarizes the material listed in Appendix L. Most of the measurements are approximated. A summary of the waste types is as follows:

- Soft waste (trash) consists of contaminated paper, plastic, clothing, etc., that was usually disposed of in cardboard boxes of unknown size.

- Perforated spacers and dummies, for practical purposes, can be classified similarly. Perforated aluminum spacers centered the reactor fuel column in the process tube and kept fuel elements in place during operation. They were 20 cm (8 inches) long with a diameter of 3.6 cm (1.4 inches) and weighed 0.2 kilograms (kg) (0.5 pounds [lbs]). "Perfs" are tubular lengths of perforated aluminum that are placed downstream of the dummy charges. Dummies are used in place of fuel elements. The majority of the dummies were made of lead but initially a few were made of wood.

- Poison refers to a lead-cadmium alloy which was used to neutralize the reactivity of hot spots in a reactor. It is in the form of a 15 cm (6 inch) long solid rod with a 3.6 cm (1.4 inch) diameter weighing 1.52 kg (3.36 lbs). "P" is another term used for reactor poisons.

- Lead commonly came in the form of bricks, sheets, wool, and casks. The most common form is a 15 cm (6 inch), 11 kg (25 lb) standard brick.

- Thimbles were used in the horizontal control rod (HCR) and vertical safety rod (VSR) channels to provide a sealed access to the reactor for the control and safety rods and for a boron solution used as a third shutdown device (WHC 1987). A thimble was typically made of aluminum and was about 10 m (35 ft) long with a 8.9 cm (3.5 inch) diameter and weighed approximately 40 kg (90 lbs).

- VSRs were used to shut down a reactor and hold it at a sub-critical level. They are approximately 12 to 15 m (40 to 50 ft) long.

- Process tubes were 12 m (40 ft) long aluminum pipes with an inside diameter of 4.45 cm (1.75 inches) and a wall thickness of 0.32 cm (0.125 inches). The process tubes weighed approximately 8.6 kg (19 lbs). When expelled from the reactor they were chopped up into 0.9 to 1.5 m (3 to 5 ft) lengths with a guillotine. There are about 2,004 process tubes in a reactor.

- Gun barrels are 2.3 m (7.6 ft) long pipes with a diameter of 5 cm (2 inch) that go on the inlet and outlet of the process tube.

- A pigtail is a small pipe with a loop in it that is used as a connector between the cross header and the nozzle of the process tube that is used for moving cooling water. A pigtail is estimated to weigh 0.9 kg (2 lbs) and the nozzle is estimated to weigh 4.5 kg (10 lbs).

- Rupture cans are sealed cans containing fuel that had ruptured in the reactor.

6.1.2 Conclusions of Primary Burial Ground Review

The detailed listing of items in the burial ground logs (summarized in Appendix L) is generally comparable with findings from the *Estimates of Solid Waste Buried in 100 Waste Burial Grounds* (WHC 1987), and should be characteristic of the primary burial grounds. One exception in the comparison is the under-representation of soft waste (defined in Section 6.1) in

Appendix L. The *Estimates of Solid Waste Buried in 100 Waste Burial Grounds* (WHC 1987) indicate that there was a substantial volume of soft waste, while the burial ground logs indicate much smaller quantities. This under representation is an indication that the current burial ground characterization is questionable and further studies should be conducted to establish a complete and accurate burial ground characterization.

Appendix L identifies several items expected to be encountered throughout the primary burial grounds. Additional items that are not listed in Appendix L, that may be encountered are industrial equipment, railroad ties, oxygen and acetylene tanks, broken concrete (up to 76 cm [30 inches] in size), pumps, ammunition boxes, graphite, and any items normally found in a landfill.

6.2 RADIATION DOSES ASSOCIATED WITH BURIAL GROUND MATERIALS

The *Estimates of Solid Waste Buried in 100 Waste Burial Grounds* (WHC 1987) includes information on the radionuclides that are anticipated to be present in the burial grounds, but does not discuss distributions or concentrations. The total curries of radionuclides listed in this document and in the WIDS database may be evenly distributed throughout the materials in the burial grounds or may be confined to smaller volumes of contaminated materials within the burial ground. Based on the information in the burial ground logs, the contaminated materials were assumed to be consolidated into groups that are dispersed throughout the burial ground. The concentration of radionuclides due to the consolidation of contaminated materials will cause higher occupational risk than if the radionuclides were distributed evenly throughout the entire burial ground.

6.2.1 Estimation of Volumes Exceeding Dose Limits

Since sample data is not available for most burial ground materials, information from the WIDS database and the *Estimates of Solid Waste Buried in 100 Waste Burial Grounds* (WHC 1987) were used to estimate the potential health hazard associated with the burial grounds. Because the distribution of the contaminated material is unknown, the radionuclides were assumed to be concentrated in a small volume. The volume of material that could be present at each dose level was calculated as follows:

Volume = Total Quantity of Radionuclide / (Soil Density x Concentration at Dose)

Units: Volume is in byd^3
Total Quantity of Radionuclide is in pCi
Soil Density is in grams per cubic yard (g/yd^3)
Concentration at Dose is in pCi/g

The total number of curries for each radionuclide present in the burial ground sites were taken from the WIDS database and the *Estimates of Solid Waste Buried in 100 Waste Burial Grounds* (WHC 1987). The soil density for the Hanford Site was assumed to be approximately 2.65 g/cm^3 (2,026,000 g/yd^3). The concentrations of each radionuclide required to produce each dose interval (Concentrations at Dose) are listed in Appendix J and explained in Section 5.5.

6.2.2 Radiation Dose Estimates for Primary Burial Ground Materials

The average dose for 118-B-1 burial ground materials was calculated to estimate the annual personnel dose expected during excavation and placement of these materials. For calculation purposes, the total curries of radionuclide constituents were assumed to be evenly distributed throughout the burial ground volume. The quantities of each radionuclide listed in the *Estimates of Solid Waste Buried in 100 Waste Burial Grounds* (WHC 1987) were divided by the estimated total weight of the burial ground to determine the concentration of each radionuclide. These concentrations were compared to Appendix J to determine the dose associated with each radionuclide concentration. The doses associated with each radionuclide were summed to determine the average dose for the site. The average dose for site 118-B-1 using this information is estimated to be approximately 1,600 mrem/yr (1.6 rem/yr) as of April 1, 1994.

Based on this information, the entire volume of material in the primary burial grounds could contain sufficient contamination to emit over 1,600 mrem/yr. Therefore, an additional evaluation was performed to provide a better understanding of possible contamination levels in the primary burial grounds. Information on the dose readings contained in the burial ground logs was analyzed to determine percentages of materials anticipated to exceed selected dose intervals. This approach provides a better understanding of the distribution of contaminated materials, but it does not take radionuclide decay into account.

The burial ground material volumes were categorized into dose ranges; the volumes were calculated by multiplying the percent of readings in each dose interval by the total contaminated volume. The percentages are shown in Appendix M. The contaminated volume from WHC ER Volume Estimates (WHC 1993a) are multiplied by the percentage of material over each radiation reading. Table 13 lists the contaminated volume associated with each burial ground. Each of the primary burial ground has been assigned a concern rating very high based on levels of contamination in the soil and debris over. Concern ratings listed in Table 13 as "None" indicate the waste site is emitting a dose below 100 mrem/yr; a "Minimal" concern rating indicates that the site contains radionuclides emitting a total dose of 100 mrem/yr to 249 mrem/yr; a "Low" concern rating indicates the waste site is emitting 250 mrem/yr to 499 mrem/yr; waste sites emitting 500 mrem/yr to 999 mrem/yr were considered to have a "Moderate" occupational safety concern; a concern rating of "High" indicates that the radionuclides at the waste site have a potential for emitting over 1 rem/yr (1,000 mrem/yr); and a concern rating of "Very High" indicates that this site is one of the seven primary burial grounds. It is anticipated that the seven primary burial grounds will pose the greatest occupational hazard for ERDF workers.

Because there is little information available for the remaining primary burial grounds in comparison to 118-B-1 burial ground (alias 105-B), the data for this burial ground is assumed to be analogous to all other primary burial grounds. The sites that are assumed to be analogous to 118-B-1 are indicated in Appendix G. The total volume of primary burial ground material that has readings over 1 rem/yr is estimated to be 580,125 m^3 (758,771 yd^3).

6.2.3 Evaluation of Other Burial Ground Materials

The majority of the burial ground sites (non-primary) were assumed to contain approximately 1 Ci of Cobalt-60 in 1986 based on WIDS data. This equates to approximately 0.4 Ci of Cobalt-60 as of April 1, 1994. Some of these sites were listed in WIDS as being as small as 8 ft long by 8 ft wide by 8 ft deep, resulting in an approximate occupational dose of 26 rem/yr (13 mrem/hr) if radionuclides are distributed over the entire volume. Therefore, in the smaller sites, it is probable that a substantial occupational risk may be associated with operations around the wastes.

The maximum volume of contaminated material that could be present for each dose interval at each waste site is shown in Table 13. The maximum volumes of waste material that would produce a dose rate of 250 mrem/yr, 1 rem/yr, 5 rem/yr and 10 rem/yr to an occupational worker at ERDF is also listed in Table 13. These volumes were estimated using a variation of the formula in Section 6.2.1. This analysis assumes that the curries of each radionuclide are confined to the volume listed in Table 13 and they are evenly distributed throughout this material. Using this method, it is not possible for a maximum volume of waste material at 250 mrem/yr to be present simultaneously with the maximum volume of waste material having a dose rate of 1 rem/yr or 5 rem/yr.

For example, burial ground 118-B-5 contains an estimated 3728 byd^3 of contaminated waste. If the dose rate received by an occupational worker at the ERDF was 250 mrem/yr, the maximum volume of contaminated waste would be 1974 byd^3. The remaining, 1754 byd^3 would contribute a dose rate of 0 mrem/yr to the worker.

6.3 HAZARD CHARACTERIZATION OF BURIAL GROUNDS MATERIALS

There are seven primary and several other burial grounds in the 100 Area and 300 Area operable units. There are also unplanned releases associated with operations at burial grounds; these sites were treated as burial grounds because of the lack of additional information about them. These burial grounds and burial ground materials, along with the assumed concern ratings are listed in Table 13.

Burial grounds will likely be the most serious safety concern for workers during normal operations at the ERDF. Recorded readings from material in the 105-B burial ground (WIDS site 118-B-1) ranging from 1 to 5 rem per hour (rem/hr) were common, but readings as high as 90 rem/hr have been recorded in logs for the 105-B burial ground. Although these readings are quite high, the materials may not be as great of a concern as these initial readings may indicate. Most of the radionuclides associated with activated metals have a half life of a few minutes to five years. Since most of the materials have been stored in the burial grounds for many years, the radionuclides associated with activated metals have significantly dissipated. Most of the radiation levels that remain are associated with constituents containing longer half life radionuclides or daughter products of previous radionuclides.

The radionuclides that are anticipated to be found in the burial grounds are listed in the *Estimates of Solid Waste Buried in 100 Waste Burial Grounds* (WHC 1987) and in the WIDS database. Based on this information, the average dose for the 118-B-1 burial ground is estimated to be approximately 1,600 mrem/yr (1.6 rem/yr) as of April 1, 1994.

7.0 LEACHATE EVALUATION

This section describes a conservative process for estimation of the concentrations for each constituent that may be present in the ERDF leachate. The leachate information will be used to properly design the ERDF liner system and the ERDF wastewater treatment facility.

The treatment process selected for the wastewater treatment facility must remove enough of the contaminants to meet regulatory requirements for discharge to the evaporation tanks.

The liner system beneath the ERDF trench will be designed for a thirty year life. HDPE is currently proposed for the geomembrane liners at the ERDF. Since HDPE will deteriorate when exposed to certain chemical compounds at sufficiently high concentrations, the liner/leachate compatibility must be evaluated.

The leachate information contained in this section may be applicable to groundwater risk assessments. However, the scope of this study does not include evaluation of the potential risk associated with contamination of groundwater.

7.1 LEACHATE CONCENTRATION CALCULATIONS

The leachate concentration analysis was based on average soil concentrations for the constituents, the chemical specific partitioning coefficients (K_d), and the solubility of each constituent.

The field investigation data for each constituent, at every sampled waste site, was averaged as explained in the Appendix B Introduction. The highest average concentration for each constituent among all sampled sites was utilized in the leachate calculations; these maximum average concentrations are listed in Table 14. The average calculations utilize all of the available data, including suspect or rejected data points. Some of the maximum average concentrations may be much lower than those listed in Table 14. The suspect data was included in the analysis because there were few samples taken at the waste sites and the data was necessary to provide a conservative estimate of potential concerns.

The analysis with the maximum site average concentrations is based on the assumption that the most contaminated waste sites will be the first to be remediated and placed in the ERDF trench. The leachate concentrations calculated with the maximum averages provide a conservative estimate to evaluate the ERDF liner and to determine upper limits for wastewater treatment. It is unlikely that the leachate will contain the highest levels of all of the constituents simultaneously. Furthermore, highest average concentrations will not be representative of the composite waste materials. To provide a more accurate estimation for wastewater treatment plant design, the overall average for each constituent, from all sampled waste sites, was also used to determine anticipated average leachate concentration. The average leachate concentrations should be closer to what is expected to be received by the treatment plant once the waste from a number of sites have been placed in the ERDF trench.

For inorganic and radionuclide constituents, the K_d values were obtained from the references in Appendix N. For organic constituents, the K_d values were not directly listed in reference materials. The K_d was calculated as follows:

Table 14. Anticipated Maximum Leachate Concentrations.

Soil Constituent	Maximum Average Site Conc.	Maximum Leachate Conc.	Overall Average Soil Conc.	Overall Average Leachate Conc.	Regulatory Limits	Possible Leachate Treatment Required for Max. Leachate Conc.	Concern Rating For Liner System	Mfgs Liner/ Leachate Limit	Maximum Soil Conc. Based on Liner Limit	Recommended Waste Acceptance Limit for Soil
Inorganic	(ug/kg)	(ug/L)	(ug/kg)	(ug/L)	(ug/L)			(ug/L)	(ug/kg)	(ug/kg)
Aluminum	20,470,500	1,000	3,708,000	1,000	(b)	X(b)	None	(d)	(f)	(g)
Antimony	18,600	664,286	272	9,714	1,900	X	None	(d)	(f)	(g)
Arsenic	11,800	421,429	3,155	112,679	1,400		None	(d)	(f)	(g)
Barium	3,095,000	1,000	92,220	1,000	1,200		None	(d)	(f)	(g)
Beryllium	900	45	52	3	820		None	(d)	(f)	(g)
Cadmium	25,500	1,107	329	14	200	X	None	(d)	(f)	(g)
Chromium	1,765,000	1,000,000	37,700	1,000,000	370	X	None	(d)	(f)	(g)
Cobalt	12,200	406	5,074	169	(c)		None	(d)	(f)	(g)
Copper	2,853,700	25,000	521,300	22,638	1,300	X	None	(d)	(f)	(g)
Iron	98,316,700	1,000	7,692,000	1,000	(c)		None	(d)	(f)	(g)
Lead	250,000	1,000	50,000	1,000	280	X	None	(d)	(f)	(g)
Magnesium	3,630,000	25,000	905,000	25,000	(c)		None	(d)	(f)	(g)
Manganese	462,000	1,000	219,000	1,000	(b)	X(b)	None	(d)	(f)	(g)
Mercury	35,550	1,000	1,200	40	150	X	None	(d)	(f)	(g)
Nickel	83,100	3,609	21,600	938	550	X	None	(d)	(f)	(g)
Potassium	2,965,000	736,097	112,000	27,805	(c)		None	(d)	(f)	(g)
Selenium	3,900	139,286	281	10,036	820	X	None	(e)	(f)	(g)
Silver	169,200	6,760	6,390	255	290	X	None	(d)	(f)	(g)
Sodium	274,000	90,489	19,000	6,275	(c)		None	(d)	(f)	(g)
Sulfate	5,670,000	25,000	1,590	25,000	(c)		None	(d)	(f)	(g)
Thallium	4,500	90	1	0	1,400		None	(d)	(f)	(g)
Vanadium	119,000	2,379	17,900	358	42	X	None	(d)	(f)	(g)
Zinc	5,120,000	25,000	89,500	3,887	1,000	X	None	(d)	(f)	(g)
Organic	(ug/kg)	(ug/L)	(ug/kg)	(ug/L)	(ug/L)			(mg/L)	(ug/kg)	(ug/kg)
Acetone	2,800	100,000	2.25	80	280	X	Low	1,000,000	28,000	2,800
Benzene	190	406	0.01	0	140	X	None	200,000	93,600	9,360
2-Butanone	5	152	0.07	2	280		None	1,000,000	33,000	3,300
Carbondisulfide	36	103	0.02	0	14	X	None	(e)	(f)	1,030
1,2-Dichloroethene (total)	0	0	0	0	54		None	(e)	(f)	0
4-Methyl-2-Pentanone	5	18	0.05	0	140		None	1,000,000	278,000	27,800
Methylene Chloride	18	85	0.6	3	89		None	100,000	20,800	2,080
Tetrachloroethene	29	26	0.91	1	56		None	100,000	112,800	11,280

Table 14. Anticipated Maximum Leachate Concentrations (Continued).

Soil Constituent	Maximum Average Site Conc.	Maximum Leachate Conc.	Overall Average Soil Conc.	Overall Average Leachate Conc.	Regulatory Limits	Possible Leachate Treatment Required for Max. Leachate Conc.	Concern Rating For Liner System	Mfgs Liner/ Leachate Limit	Maximum Soil Conc. Based on Liner Limit	Recommended Waste Acceptance Limit for Soil
Organic	(ug/kg)	(ug/L)	(ug/kg)	(ug/L)	(ug/L)			(mg/L)	(ug/kg)	(ug/kg)
Toluene	30	32	2.90	3	80		None	200,000	185,600	18,560
Trichloroethene	36	61	1.23	2	54	X	None	100,000	57,800	5,780
Vinyl Chloride	120	390	1.01	3	270	X	None	100,000	30,800	3,080
Acenaphthene	81	6	0.15	0	59		None	200,000	2,805,600	280,560
Aroclor-1248	159	0	23.7	0	13		None	50,000	110,001,400	11,000,140
Aroclor-1254	678	0	91.7	0	14		None	50,000	180,001,400	18,000,140
Aroclor-1260	600	0	0.54	0	14		None	50,000	600,001,400	60,000,140
Anthracene	6,300	75	2.24	0	59	X	None	200,000	14,005,600	1,400,560
Benzo(a)anthracene	900	0	3	0	59		None	200,000	1,200,005,600	120,000,560
Benzo(a)pyrene	470	0	1.74	0	61		None	200,000	3,000,005,600	300,000,560
Benzo(b)fluoranthene	1,200	0	3.85	0	55		None	(e)	(f)	0
Benzo(ghi)perylene	230	0	1.26	0	6		None	200,000	500,005,600	50,000,560
Benzo(k)fluoranthene	190	0	3.61	0	59		None	50,000	850,001,400	85,000,140
Benzoic Acid	850	30,357	1.80	64	(b)	X(b)	None	(e)	(f)	303,570
Bis (2-ethylhexhl) phthalate	16,780	41	618	8	280		None	200,000	15,005,600	1,500,560
Butylbenzylphthalate	1,300	1,265	233	227	17	X	None	200,000	205,600	20,560
Carbazole	170	24	0.12	0	(b)	X(b)	None	(e)	(f)	240
Carbon Tetrachloride	3	2	0.05	0	57		None	100,000	142,800	14,280
4 Chloro-3-Methylphenol	170	612	0.11	0	(b)	X(b)	None	(e)	(f)	6,120
2-Chlorophenol	170	14	0.11	0	44		None	50,000	601,400	60,140
Chloroform	1	5	0.02	0	46		None	100,000	19,800	1,980
4-Chloroaniline	3,150	763	69.60	17	460	X	None	(e)	(f)	7,630
Chrysene	460	0	3.38	0	59		None	200,000	380,005,600	38,000,560
Di-n-octyl-phthalate	170	0	0.09	0	17		None	(e)	(f)	0
Di-n-butyl-phthalate	1,472	86	257.00	15	57	X	None	(e)	(f)	860
Dibenzofuran	60	2	0.00	0	(b)	X(b)	None	(e)	(f)	20
1,3 Dichlorobenzene	170	111	0.10	0	36	X	None	50,000	76,400	7,640
1,4 Dichlorobenzene	170	84	0.11	0	90		None	50,000	101,400	10,140
Diethyl phthalate	170	104	0.66	0	200		None	200,000	325,600	32,560
Ethylbenzene	330	399	0.013	0	57	X	None	200,000	165,600	16,560
Fluoranthene	1,450	4	5.12	0	68		None	50,000	16,501,400	1,650,140
Fluorene	1,700	68	0.83	0	59	X	None	50,000	1,251,400	125,140
Indeno(1,2,3-cd)pyrene	240	2	1.20	0	6		None	200,000	20,005,600	2,000,560
2-Hexanone	0	0	0.0002	0	280(a)		None	(e)	(f)	0

Table 14. Anticipated Maximum Leachate Concentrations (Continued).

Soil Constituent	Maximum Average Site Conc.	Maximum Leachate Conc.	Overall Average Soil Conc.	Overall Average Leachate Conc.	Regulatory Limits	Possible Leachate Treatment Required for Max. Leachate Conc.	Concern Rating For Liner System	Mfgs Liner/ Leachate Limit	Maximum Soil Conc. Based on Liner Limit	Recommended Waste Acceptance Limit for Soil
Organic (continued)	(ug/kg)	(ug/L)	(ug/kg)	(ug/L)	(ug/L)			(mg/L)	(ug/kg)	(ug/kg)
2-Methylnaphthalene	13,000	302	0.49	0	59(a)	X	None	(e)	(f)	3,020
4-Methyphenol	500	274	11.10	6	(b)	X(b)	None	(e)	(f)	2,740
Naphthalene	4,100	583	0.16	0	59	X	None	200,000	1,405,600	140,560
2-Nitrophenol	170	284	4.08	7	120	X	None	(e)	(f)	2,840
N-Nitrosodiphenylamine	37	6	0.68	0	400		None	(e)	(f)	60
Pentachlorophenol	850	47	11.20	1	89		None	(e)	(f)	470
Phenanthrene	2,500	21	0.81	0	59		None	200,000	24,005,600	2,400,560
Phenol	170	475	5.93	17	39	X	None	200,000	71,600	7,160
1,1,1-Trichloroethane	0	1	0.00002	0	54		None	(e)	(f)	10
Pyrene	1,350	22	12.10	0	67		None	200,000	12,005,600	1,200,560
Xylenes	1,300	4,088	0.05	0	320	X	None	200,000	63,600	6,360
2,4-D	0	2	0	0	720		None	(e)	(f)	20
4,4'DDD	6	0	0.002	0	23		None	50,000	20,501,400	2,050,140
4,4'DDE	41	0	0.90	0	31		None	50,000	12,501,400	1,250,140
Aldrin	4	0	0.002	0	240		None	50,000	3,551,400	355,140
Beta-BHC	4	0	0.002	0	0.14		None	100,000	1,502,800	150,280
Dieldrin	8	0	0.004	0	17		None	100,000	3,702,800	370,280
Endrin	8	0	0.005	0	3		None	100,000	17,002,800	1,700,280
gamma-Chlordane	9	0	0.0003	0	3		None	100,000	4,302,800	430,280
Heptachlor	4	0	0.003	0	1		None	100,000	15,002,800	1,500,280
Radionuclide	(pCi/kg)	(pCi/L)	(pCi/kg)	(pCi/L)	(pCi/L)			(pCi/L)	(pCi/kg)	(pCi/kg)
Americium-241	15,600	78	850	4	20	X	None	(e)	(f)	156,000
Beryllium-7	6,800	340	8	0	600,000		None	(e)	(f)	68,000
Carbon-14	199,000	7,107,143	13,440	480,000	30,000	X	None	(e)	(f)	1,990,000
Cesium-134	0	0	0	0	900		None	(e)	(f)	0
Cesium-137	448,800	8,971	3,230	65	1,000	X	None	(e)	(f)	4,488,000
Chromium-51	300	10,714	0.3	0	500,000		None	(e)	(f)	3,000
Cobalt-58	3,500	70	10	0	20,000		None	(e)	(f)	35,000
Cobalt-60	157,500	3,148	10,960	219	3,000	X	None	(e)	(f)	1,575,000
Europium-152	925,300	4,626	74,300	371	10,000		None	(e)	(f)	9,253,000
Europium-154	207,500	1,037	15,180	76	7,000		None	(e)	(f)	2,075,000
Europium-155	18,000	90	1,090	5	50,000		None	(e)	(f)	180,000
Plutonium-238	2,900	46	150	2	20	X	None	(e)	(f)	29,000
Plutonium-239/240	62,200	987	3,290	52	20	X	None	(e)	(f)	622,000

Table 14. Anticipated Maximum Leachate Concentrations (Continued).

Soil Constituent	Maximum Average Site Conc.	Maximum Leachate Conc.	Overall Average Soil Conc.	Overall Average Leachate Conc.	Regulatory Limits	Possible Leachate Treatment Required for Max. Leachate Conc.	Concern Rating For Liner System	Mfgs Liner/ Leachate Limit	Maximum Soil Conc. Based on Liner Limit	Recommended Waste Acceptance Limit for Soil
Radionuclide (continued)	(pCi/kg)	(pCi/L)	(pCi/kg)	(pCi/L)	(pCi/L)			(pCi/L)	(pCi/kg)	(pCi/kg)
Potassium-40	16,000	3,182	7,210	1,434	4,000		None	(e)	(f)	31,820
Radium-226	9,400	469	450	22	60	X	None	(e)	(f)	94,000
Sodium-22	5,400	1,341	60	15	6,000		None	(e)	(f)	54,000
Strontium-90	267,000	14,810	15,810	877	500	X	None	(e)	(f)	2,670,000
Technetium-99	500	17,857	61	2,179	60,000		None	(e)	(f)	5,000
Thorium-228	1,100	22	480	10	200		None	(e)	(f)	11,000
Thorium-232	1,740	35	390	8	30	X	None	(e)	(f)	17,400
Uranium-233/234	359,900	350,097	22,930	22,305	300	X	None	(e)	(f)	3,599,000
Uranium-235	5,000	4,864	950	924	300	X	None	(e)	(f)	50,000
Uranium-238	451,200	438,911	20,700	20,136	300	X	None	(e)	(f)	4,512,000

a) Values from Preliminary Draft RI/FS for the ERDF, DOE/RL-93-99, 2/18/94.
b) No data available in CFR to determine if leachate treatment may be required, waste definition assumed to equal zero.
c) Essential nutrient; Clean-up levels not based on these constituents.
d) Leachate limits not available from liner manufacturer, though rated as passing; see Appendix O.
e) Leachate limits not available from liner manufacturer.
f) Maximum soil concentration based on liner limit not calculated;manufacturers limits not available.
g) Maximum soil concentration is not limited for this constituent.
Low = No anticipated concern to liner system integrity from exposure, but near or above recommended waste acceptance limit.
None = No anticipated concern to liner system integrity from exposure.

K_d = 0.5% Organics x (Organic-Carbon Partition Coefficient) K_{oc}

Units: K_d in liter per kilogram (L/kg)
K_{oc} in L/kg

Appendix N lists the K_d values that were calculated for each constituent. The K_{oc} was derived from regression relationships involving the octanol-water partition coefficient (K_{ow}). The values for log K_{ow} were obtained from the *Hazardous Substance Data Bank* or as referenced in Appendix N. The organic content in the soil is assumed to be 0.5 percent.

The leachate constituent concentrations were calculated by dividing the soil concentrations by the K_d values for each constituent plus the volumetric moisture content (VMC) of the waste divided by the dry density of the waste (∂_d). The leachate concentrations were assumed to be equal to the equilibrium pore water concentration. This is a conservative approach since infiltration of precipitation may occur at a high enough rate that equilibrium may not be reached.

$$\text{Leachate Concentration} = \text{Soil Concentration} / (Kd + VMC / \partial_d)$$

Units: Leachate Concentration in micrograms per liter (µg/L)
Avg. Soil Concentration in micrograms per kilogram (µg/kg)
K_d in L/kg
∂_d is assumed to be 1.6 kilogram per liter (kg/L)
VMC is unitless and is assumed to be 0.045

The K_d derived leachate concentrations were compared with the solubilities of each constituent. The smallest value was used as the leachate concentration for each constituent. The maximum estimated leachate concentrations and the average leachate concentrations are listed in Table 14.

7.2 EVALUATION OF TREATMENT REQUIREMENTS

Evaporation tanks are proposed for temporary storage of leachate from the ERDF trench. However, the leachate will need to meet all applicable code requirements before it can be placed in the tanks. The regulatory leachate concentration limits were compared with the maximum and average estimated leachate concentration to determine if leachate treatment will be required prior to placement into the tanks.

7.2.1 Regulatory Leachate Concentration limits for Organics and Inorganics.

The regulatory concentration limits listed in column 6 of Table 14 for organic and inorganic constituents were taken from 40 CFR 268.43, Table CCW Constituent Concentration in Wastes. Values from Waste Code F039 were used as the regulatory leachate limits. These limits are appropriate for leachate (liquids that have percolated through land disposal wastes) resulting from the disposal of more than one restricted waste classified as hazardous under subpart D of 40 CFR 261.31.

Table CCW provides values for wastewater and nonwastewater concentrations under Waste Code F039. Wastewaters are defined as wastes that contain less than 1 percent by weight total organic carbon (TOC) and less than 1 percent by weight total suspended solids (TSS). Since it is anticipated that the TSS and TOC will be below limits, the values for wastewaters were used.

7.2.2 Regulatory Leachate Concentration limits for Radionuclides.

Information from 10 CFR 20, Appendix B, Table 2 was used to determine allowable concentration limits for leachate containing radionuclides. The leachate concentrations were derived from the relative concentrations of radionuclides in the environment corresponding to human dose. Concentration limits listed in column 6 of Table 14 for the radionuclide constituents, are concentrations which, if ingested continuously over the course of a year, would produce a total effective dose of 50 mrem.

When more than one radionuclide constituent is involved in the exposure, the fractional dose for each radionuclide must be summed to determine the total dose from the radionuclide mix. Radionuclide concentrations, exposure volumes, and annual doses are all linearly related and may be prorated accordingly. Since the maximum concentrations listed in Table 14 are not expected to all appear at once, and the combination of constituents that will appear at any given time is unknown, the doses have not been summed in this study.

7.2.3 Comparison of Leachate Concentrations to Regulatory Concentration Limits.

The regulatory constituent concentration limits were compared to the maximum and estimated calculated leachate concentrations. Many of the maximum estimated leachate concentrations exceed the regulatory limits; however, these concentrations are very conservative. The maximum calculated concentrations of individual constituents will not occur simultaneously and will only be experienced during initial placement of wastes, if at all. Once waste from a number of sites are placed in the ERDF, it is anticipated that the concentrations will begin to resemble the estimated overall average leachate concentrations.

When the regulatory constituent concentration limits were compared to the overall average calculated leachate concentrations, there were few contaminants over the regulatory limits. These were limited to a few metals and one organic compound.

The proposed ERDF treatment facility will reduce the concentrations of constituents that are expected to exceed regulatory limits. It is recommended that the treatment system be designed to handle the average leachate concentrations because the maximum concentrations are very conservative and under normal operating conditions, leachate concentrations should resemble the average calculated concentrations.

7.3 EVALUATION OF LEACHATE COMPATIBILITY WITH ERDF LINER

HDPE is currently proposed for the geomembrane liners at the ERDF. This material was selected because it is considered the most chemically resistant of the commercially-available liner products. However, even HDPE will deteriorate when exposed to certain chemical compounds at sufficiently high concentrations. The quantities of wastes containing specific compounds that affect HDPE may need to be limited in the ERDF.

7.3.1 HDPE Liner Manufacturer's Recommendations

The HDPE manufacturers provided general guidelines and chemical specific limitations based on testing and experience. The information is presented in Appendix O and is summarized in this section.

General guidelines for HDPE chemical compatibility are:

- Dissolved metals and salts: No effect.
- Strong oxidizers: Concentrated solutions of oxidizing acids can cause embrittlement over time.
- Acids: Concentrated solutions of oxidizing acids can cause embrittlement over time.
- Bases: Generally not harmful to HDPE.
- Organic compounds:
  - Aromatic Halogenated Hydrocarbons (e.g., dichlorobenzene): May slowly dissolve HDPE under continuous exposure to high concentrations at elevated temperatures.
  - Aromatic Hydrocarbon (e.g., xylene): Similar to aromatic halogenated hydrocarbons, but to a lesser extent.
  - Volatile (e.g., acetone) and Semi-Volatile Organics: Similar to aromatic hydrocarbons, but to a lesser extent.
  - Aliphatic Halogenated Hydrocarbons (e.g., trichloroethene): May soften HDPE, reduce yield strength, and increase permeability.
  - Oil and Grease: Slight softening and slight loss of strength.

None of the inorganic metals and salts produced evidence of chemical incompatibility under the test conditions. Organic compounds produced varied effects depending on concentration. Pure compounds often degraded HDPE, while more dilute solutions did not. Chemical specific data are presented in Table 14 and Appendices N and O.

7.3.2 Estimation of Acceptable Constituent Concentrations in Wastes

The chemical specific data provided by the HDPE manufacturers were used to recommend ERDF leachate limits and are listed in Table 14. These leachate limits were used to calculate the maximum allowable soil concentrations that, if placed in the ERDF trench, would not cause substantially degradation of the liner system. The maximum acceptable soil concentrations were determined as follows:

$$\text{Maximum Soil Concentration} = \text{Leachate Limit} \times (Kd + VMC / \partial_d)$$

Units: Maximum Soil Concentration in µg/kg
Leachate Limit from liner requirements in µg/L
K_d in L/kg
∂_d is assumed to be 1.6 kg/L
VMC is unitless and assumed to be 0.045

The maximum allowable soil concentrations are shown in Table 14. Since the combined effects of these constituents are not included in this evaluation, it is recommended that a safety factor be applied to the soil limits listed in Table 14. Any waste site with a constituent concentration higher than one tenth of the leachate limits should be evaluated further prior to placement into the ERDF trench.

Table 14 includes a concern rating associated with each constituent that could affect the liner system. These concern ratings are based on the maximum anticipated leachate concentrations with an additional safety factor of ten. A concern rating of none indicates that the concentrations anticipated are substantially lower than the liner manufacturer's recommended limits. A concern rating of low indicates that the anticipated concentrations are near or within a factor of ten of the liner system limits. No constituent concentrations exceeded the low concern rating.

7.3.3 Evaluation of Radionuclide Compatibility with HPDE Liner

Data is very limited with respect to the effects of radioactive metals on HDPE. However, chemically, they are expected to behave as metallic salts and therefore are not expected to cause deterioration.

The effects of radiation may be roughly assessed by reviewing other studies. Chemical compatibility testing performed for the Project W-025 Landfill on the Hanford Site found that there was no evidence of deterioration from radiation doses of 50 kiloRad (kRad) (WHC 1992b). Chemical compatibility testing of irradiated liner was also performed by Pacific Northwest Laboratory (PNL) for the Grout Facility (Farnsworth and Hymas 1989). This study subjected a HDPE liner to radiation doses of 0.6, 3.6, 16, and 36 megaRad (MRad). Some embrittlement was observed due to radiation-induced cross linking of the polymer chains, but only at the two highest radiation doses. The maximum radiation dose for the ERDF liner is estimated in Appendix P to be 0.7 Rad per year (2.1 MRad over the 30 year life of the facility). This estimate uses conservative assumptions and is based on the maximum radionuclide concentrations listed in Table 14. On this basis, radionuclides in the ERDF waste are not expected to cause liner failure.

The PNL test results (Farnsworth and Hymas 1989) may be used to provide a semi-quantitative estimate for radionuclides in the waste soil. This study found that there was a slight reduction of liner strength and elongation at failure at radiation doses of 16 and 36 MRad. The liner design proposed for the ERDF has substantial excess strength to accommodate expected loads, and therefore slight reductions in mechanical properties are not expected to affect geomembrane performance. On this basis, radiation doses up to 21 Rad are considered acceptable. This dose is 1,000,000 times greater than the dose estimated from the maximum leachate concentrations reported in Table 14 (22 Rad). On this basis, it is unlikely that dose limits will be exceeded by ERDF waste.

Specific limits for each radionuclide cannot be calculated at this time because there are many distributions of radionuclides in the soil that can produce higher dose levels. The aggregate dose potential of large quantities of highly radioactive soil (i.e., where site concentrations substantially exceed the values reported in Table 14) should be evaluated on a case-by-case basis. However, very conservative limits have been recommended as preliminary waste acceptance criteria for soil materials.

7.3.4 Conclusions of Liner Compatibility Study

Dissolved metals and salts are not expected to cause deterioration of the HDPE liner. This conclusion is supported by both general guidelines and specific test data.

Although high concentrations of organic compounds can cause deterioration of HDPE, the concentrations expected in ERDF leachate are generally far below the limits recommended by the liner manufacturers. The only exception is acetone; however, acetone is a common lab contaminant and is highly volatile in the environment. As such, the calculated maximum average concentration may be artificially high and if acetone is encountered it has a high likely hood of volatilizing. It is not anticipated that concentrations at this level will be actually encountered in the waste materials. There are two limitations to the use of data provided by the manufacturers that should be noted. First, the manufacturers' chemical compatibility data are generally based on tests ranging in length from 7 to 120 days. These durations may not be adequate to identify very slow processes that may deteriorate HDPE liner over a period of tens of years. Second, the results are based on tests using single chemical compounds. Combinations of compounds, which are more likely to be in a leachate, may have synergistic effects and lead to higher rates of deterioration. For these reasons, it is considered prudent to prohibit quantities of organic constituents in the incoming waste to levels below the manufacturers' guidelines. A reasonable limit may be one tenth of the soil limit calculated based on liner manufacturers' recommended limits.

Although there is little data on the effects of radioactive metals on HDPE, it is anticipated that they will behave similar to metallic salts and cause no deterioration of the liner system. The effects of radiation were assessed by reviewing other studies. Based on reviews of this data and comparison to expected conditions, radionuclides in the ERDF waste are not expected to cause problems within the 30 year life of the liner. It is recommended that maximum acceptable soil limits be set at approximately ten times the maximum average site concentrations listed in Table 14.

8.0 SUMMARY

The objectives of this engineering study were to: analyze available field investigation data for waste sites in the 100 Area and 300 Area operable units; estimate the total excavated volume and total contaminated volumes associated with the remediation of the waste sites; categorize the contaminated waste volume as TSCA hazardous, non-TSCA hazardous, radioactive, TSCA mixed, or non-TSCA mixed wastes; evaluate potential occupational health hazards associated with handling the contaminated waste volumes during normal operations at the proposed ERDF facility; and estimate constituent concentrations expected in the ERDF leachate to evaluate the effects of the leachate on the proposed ERDF design.

8.1 INTRODUCTION

This engineering study includes an evaluation of all the waste sites listed in the WIDS database for the following operable units: 100-BC-1, 100-BC-2, 100-BC-3 (now included in 100-BC-2), 100-BC-4 (now included in 100-BC-2), 100-DR-1, 100-DR-2, 100-DR-3, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-IU-2, 100-KR-1, 100-KR-2, 100-KR-3, 100-NR-1, 300-FF-1, 300-FF-2, 300-FF-3, 300-FF-4, and 300-IU-1. Table 1 lists all the waste sites associated with each of the operable units and Appendix A summarizes waste site information from the WIDS database.

Analytical data obtained from field investigations for operable units 100-BC-1, 100-DR-1, 100-HR-1, 300-FF-1, and 100-NR-1 are summarized in Appendix B. The tables in Appendix B provide a summary of the contamination, including the constituents, concentrations, and the depth of the contamination for inorganic, organic, and radionuclide constituents for each sampled waste site.

8.2 VOLUME ESTIMATES FOR TOTAL EXCAVATED AND TOTAL CONTAMINATED SOIL

The WHC ER waste site volume estimates were reviewed and this information was used to prepare volume estimates for 100 Area and 300 Area operable unit waste sites that were excluded from the WHC ER volume estimates. The excluded waste sites include D&D sites and a few other miscellaneous sites. The WHC ER volume estimates are explained in Appendix C and listed in Appendix D, and the non-ER volume estimates are explained in Appendix E and listed in Appendix F. The volume estimates for the ER and non-ER waste sites were totaled to estimate the capacity requirements for the ERDF. The estimated total volume of excavated material is 18.5 million bm^3 (24.2 million byd^3), which is broken down by operable unit in Table 2. The total estimated volume of contaminated waste is 8.5 million bm^3 (11.2 million byd^3), which is broken down by operable unit in Table 3.

The volumes estimated in this engineering study are based on many assumptions and volumes could vary substantially depending on the decisions that are made by DOE and the regulators. The clean-up levels have not yet been set for the remediation of the waste sites at Hanford. These clean-up levels may have a significant impact on the volume of waste excavated from each waste site. Also, pretreatment options, such as volume reduction via physical separation or soil washing, may substantially reduce the volumes placed in the proposed ERDF. Volume reduction will however, cause an increase in the concentrations of the constituents placed in the ERDF. Treatment such as grouting, may increase the volumes. There is also a potential for placement of 200 Area waste and contaminated soil in the ERDF trench.

8.3 ANALOGOUS SITES

The WIDS database and analytical data were reviewed to evaluate the degree of correlation between waste sites in the 100 Area and 300 Area operable units. This review included extrapolating the contamination information from sampled waste sites to those sites which do not have remedial investigation data. Analogous site information is summarized in Appendix G.

8.4 WASTE CATEGORIES AND VOLUMES

The soil, sludge, and burial ground volumes were categorized into non-TSCA hazardous, TSCA hazardous, non-TSCA mixed, TSCA mixed, and radioactive waste by determining the percentage of contaminated volume over the waste cut-off limits.

The cut-off limits in this study have been used in the past or are used by other agencies as clean-up levels. For inorganic and organic constituents, cut-off limits were based on WAC, *Model Toxics Control Act--Cleanup*, WAC-173-340-740 and on EPA Region 3 Toxicity Equivalence Factors. Radioactive constituent cut-off limits were based on the mean background level plus three standard deviations.

Detailed listings of volumes for each analogous site grouping for all sampled constituents are listed in Appendix H. The volumes of waste containing each constituent are listed in Tables 5, 6, and 7; the volumes in each category are summarized by operable unit in Table 4. The total volume of material that is anticipated for: hazardous waste is 319,000 bm^3 (417,000 byd^3), mixed waste is 1,020,000 bm^3 (1,334,000 byd^3), and radioactive waste is 5,531,000 bm^3 (7,234,000 byd^3). However, as clean-up levels are established for Hanford waste sites, these waste volume estimates may vary substantially.

8.5 OCCUPATIONAL HEALTH EVALUATION FOR SAMPLED WASTE SITES

The analysis discussed in this section was used to evaluate potential health risks associated with sampled waste sites and their analogies. This section also discusses all non-burial ground sites with no analogies. Constituent concentration limits for soils were estimated based on occupational air exposure limits and external radiation dose limits. The limits were used to evaluate the potential health hazards associated with the contamination at he waste sites. Inorganic, organic, and radionuclide constituents were evaluated based on OSHA dust inhalation limits; volatile organic compounds were evaluated based on volatilization; and radionuclide constituents were evaluated based on external exposure of workers to radiation. The occupational limits are shown in Appendices I and J. These limits and corresponding maximum sampled constituent concentrations are listed in Tables 8, 9, and 10.

Constituent concentrations for inorganic and organic constituents were well below acceptable soil concentrations for potential health hazards for all waste sites. Sites containing radionuclide constituents were rated based on the doses that a worker would receive from the waste. The radionuclide constituents that were found to be responsible for most of the radiological concern were Cesium-137, Cobalt-60, Europium-152, Europium-154, and Radium-226. Uranium-238, Potassium-40, and Sodium-22 also contributed small quantities (10 to 50 mrem/yr) to the overall estimated dose. The sites that are responsible for emitting doses of 50 mrem/yr or greater for individual radionuclides are listed in Table 11.

Each site was assigned a concern rating based on the estimated amount of external radionuclide contamination expected to be received from each waste site. Tables 12 and 13 list all sites included in this study and associated concern ratings.

For each reviewed site, the doses for each contributing constituent were totaled to estimate cumulative occupational doses. Sites with a total dose of greater than 10 mrem/yr are summarized in Appendix K. The total contaminated volume for the sampled waste sites and analogies included in this study is approximately 6.0 million bm^3 (7.9 million byd^3). The total volumes of waste emitting radiation doses over 250 rem/yr is approximately 361,000 bm^3 (473,000 byd^3) and the total volume expected to emit over 1 rem/yr (1,000 mrem/yr) is approximately 71,000 bm^3 (93,000 byd^3). The higher radiation doses are associated with sludges in site 116-C-5. Some of the sites assumed to be analogous to this site may not contain sludge. For this reason, the highly contaminated waste volumes may be significantly overestimated.

8.6 OCCUPATIONAL HEALTH EVALUATION FOR BURIAL GROUNDS

Burial ground sites are more difficult to characterize than the previously discussed waste sites because in addition to contaminated soils, burial grounds contain a variety of radioactively contaminated and activated debris. Due to the variety of debris, it is difficult to sample and predict doses associated with these waste sites.

There are seven primary burial grounds in the 100 Area and 300 Area operable units. All of these burial grounds are anticipated to be similar to the 105-B burial ground (WIDS site 118-B-1), as well as unplanned releases associated with operations at burial grounds. These burial grounds and unplanned releases, along with the assumed concern ratings are listed in Table 13.

Information from the WIDS database and the *Estimates of Solid Waste Buried in 100 Waste Burial Grounds* (WHC 1987) were used to estimate the potential health hazard associated with the burial grounds. The average dose for 118-B-1 burial ground materials was estimated to be approximately 1,600 mrem/yr (1.6 rem/yr) as of April 1, 1994. However, it is probable that the radionuclides are not evenly distributed, so much higher readings are expected. It was estimated that some of the non-primary burial grounds containing 0.4 Ci of Cobalt-60 would emit doses as high as 26 rem/yr (13 mrem/hr). For this reason, caution must be exercised when working around any of the burial ground materials.

The maximum volumes of waste material that would produce a dose rate of 250 mrem/yr. 1 rem/yr, 5 rem/yr and 10 rem/yr to an occupational worker at ERDF are also listed in Table 13. The total estimated contaminated volume of burial ground material is 1,511,000 bm^3 (1977 byd^3). The total estimated volume of burial ground material that has readings over 1 rem/yr is estimated to be 596,000 m^3 (780,000 yd^3).

The waste acceptance criteria for the proposed ERDF has not yet been established. Some of the waste contained in the burial grounds may not meet the waste acceptance criteria.

8.7 LEACHATE EVALUATION

The leachate concentration analysis was based on average soil concentrations for the constituents, the chemical specific partitioning coefficients (K_d), and the solubility of each constituent. The allowable leachate concentrations for constituents were based on the waste definition of F039 wastes in 40 CFR 268 and on 10 CFR 20. Many of the maximum estimated leachate concentrations exceeded the regulatory limits. However, the average estimated leachate concentrations are more representative of leachate anticipated during normal ERDF operations. The constituents that may require treatment based on these average concentrations are metals and butylbenzylphthalate.

The maximum acceptable soil concentrations were calculated based on the maximum allowable leachate concentrations as determined by liner system criteria. All of the concentrations present, based on the limited field data reviewed in this study, are well below the recommended limits from liner manufacturers. Data from HDPE liner manufacturers are included in Appendix O. Recommended waste acceptance soil concentration limits were calculated based on manufacturers' data and are shown in Appendix N and Table 14.

Recommended waste acceptance limits were estimated for radionuclide constituents based on distributions of radionuclides from sample data as shown in Appendix P. A variety of other distributions could occur and may be acceptable based on total dose test data for HDPE liners. Therefore, waste materials with individual radionuclide concentrations over the waste acceptance limits should be evaluated based on the actual radionuclide distributions in the wastes.

All of the calculations in this study utilize all of the available field investigation data, including suspect or rejected values. The suspect data was included in the analysis because there were few samples taken at the waste sites and the data was necessary to provide a conservative estimate of potential concerns.

8.8 RECOMMENDATIONS FOR ERDF DESIGN

To minimize the effects of radiation in bulk soils, the as low as reasonably achievable (ALARA) principal should be followed during all operations at the proposed ERDF. When operating around burial ground materials, care should be taken to determine radiation levels prior to material entering the ERDF site. Due to the high initial burial ground readings and the unknown distributions of total known quantities of radionuclides, it is recommended that consideration be given to remote handling operations, or that special procedures and/or packaging be utilized for burial ground materials, until the potential health concerns are further defined through on-site monitoring during excavation.

Leachate concentrations encountered during field investigations indicate that constituent concentrations will be substantially below the liner system capabilities. It is recommended that waste acceptance criteria be set at levels similar to those recommended in Table 14.

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APPENDIX A

SUMMARY OF WASTE INFORMATION DATA SYSTEM (WIDS) DATABASE

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INTRODUCTION

Hanford Site
Waste Information Data System (WIDS) Database
November, 1993

This engineering study includes all waste sites listed in the WIDS database, as of November 1993, for operable units: 100-BC-1, 100-BC-2, 100-BC-3 (now 100-BC-2), 100-BC-4 (now 100-BC-2), 100-DR-1, 100-DR-2, 100-DR-3, 100-FR-1, 100-FR-2, 100-HR-1, 100-HR-2, 100-IU-2, 100-KR-1, 100-KR-2, 100-KR-3, 100-NR-1, 300-FF-1, 300-FF-2, 300-FF-3, 300-FF-4, and 300-IU-1. Any additions or changes to the WIDS after November 1993, will not be reflected in this engineering study.

This appendix summaries the WIDS database information utilized in this report.

OPERABLE UNIT 100-BC-1

Site Name:	116-B-1
Aliases:	107-B Liquid Waste Disposal Trench
Site Description:	This trench operated from 1946 to 1955
Waste Types and Amounts:	The site received effluent from the 107-B Retention Basin at times of high activity due to fuel element failure.
Site Dimensions:	200 ft (l) x 30 ft (w) x 15 ft (d)

Site Name:	116-B-2
Aliases:	105-B Storage Basin Trench
Site Description:	This trench operated in 1946
Waste Types and Amounts:	This unit was dug after a fuel element was cut in half (accidentally) in the 105-B Storage Basin. Basin water was discharged to this unit in an attempt to remove radionuclides from the fuel storage basin cooling water for contamination control.
Site Dimensions:	75 ft (l) x 10 ft (w) x 15 ft (d)

Site Name:	116-B-3
Aliases:	105-B Pluto Crib
Site Description:	The unit is an excavation, possibly shored with railroad ties and filled with gravel. It is marked with a concrete marker flush to the ground. This crib was in operation from 1951 to 1952
Waste Types and Amounts:	The site received effluent from reactor tubes containing ruptured fuel elements.
Site Dimensions:	10 ft (l) x 10 ft (w) x 11 ft (d)

Site Name:	116-B-4
Aliases:	105-B Dummy Decontamination French Drain 105-B Dummy Decontamination Disposal Crib
Site Description:	The unit has a graded rock and sand bottom. It is marked with four yellow steel posts and has a curved yellow pipe in the center along with a concrete marker. This French Drain was in operation from 1957 to 1968
Waste Types and Amounts:	The site received spent acid rinse water from the 105-B dummy (fuel element spacers and reactor hardware) decontamination facility
Site Dimensions:	20 ft deep and 4 ft in diameter

Site Name:	116-B-5
Aliases:	108-B Crib
Site Description:	This Crib operated from 1950 to 1968
Waste Types and Amounts:	The site received liquid tritium wastes from the 108 Building. Only wastes of less than 1 uCi/cc were discharged into this unit.
Site Dimensions:	84 ft (l) x 16 ft (w) x 10 ft (d)

OPERABLE UNIT 100-BC-1

Site Name:	116-B-6A
Aliases:	111-B Crib No. 1 116-B-6-1
Site Description:	Crib operated from 1951 to 1968
Waste Types and Amounts:	The site received radioactive wastes from equipment decontamination, the 111-B Building, and liquid wastes from fuel element spacer decontamination (performed at 111-B Building Decontamination Station).
Site Dimensions:	12 ft (l) x 8 ft (w) x 15 ft (d)

Site Name:	116-B-6B
Aliases:	111-B Crib No. 2 116-B-2
Site Description:	Crib operated from 1950 to 1953
Waste Types and Amounts:	The site received radioactive wastes from equipment decontamination in the 111-B Building and liquid wastes from fuel element spacer decontamination.
Site Dimensions:	4 ft (l) x 8 ft (w) x 8 ft (d)

Site Name:	116-B-7
Aliases:	1904-B1 Outfall Structure
Site Description:	This outfall structure was active from 1944 to 1968. The unit consisted of an open concrete sump and effluent lines that ran from the sump to approximately mid-channel of the river. It also included a concrete spillway that terminated at the shoreline. It is fenced with hog wire fencing.
Waste Types and Amounts:	Used for the disposal of water plant treatment waste water.
Site Dimensions:	27 ft (l) x 14 ft (w)

Site Name:	116-B-9
Aliases:	104-B-2 French Drain
Site Description:	French drain operated from 1952 to 1954
Waste Types and Amounts:	The site received waste water from the P-10 Storage Building drain.
Site Dimensions:	3 ft deep and 4 ft in diameter

Site Name:	116-B-10
Aliases:	108-B Dry Well Quench Tank
Site Description:	This French drain operated from 1950 to 1968. The unit has a metal manhole type cover. A 1.5-in. drain line was added in the mid-50's that came from the experimental tube and other hardware decontamination facility.
Waste Types and Amounts:	This site received liquid decontamination wastes from the 108-B Tube Examination and Experimentation Facility. During tritium recovery programs the site also received liquid decontamination wastes from the mask and small tool decontamination station located on the second floor.
Site Dimensions:	7 ft deep and 3 ft in diameter

OPERABLE UNIT 100-BC-1

Site Name: 116-B-11
Aliases: 107-B Retention Basin
Site Description: This retention basin was in operation from 1944 to 1968. The unit is concrete lined with a vertical baffle down the middle, lengthwise. The floor consists of concrete slabs, their joints originally closed with neoprene water seals. To a height of almost 10 ft above the floor, the walls slope and are ~4 in. thick. The upper sections of the walls, ~10 ft, are vertical and range in thickness from ~5 ft 8 in. at the bottom to 1 ft at the top. The unit was backfilled with soil to a depth of almost 4 ft.
Waste Types and Amounts: This unit received cooling water effluent from the 105-B Reactor for radioactive decay and thermal cooling prior to release to the Columbia River. Total radionuclide inventories in the vicinity of the unit ranged from 5 to over 400 Ci. Eighty percent of the total radionuclide inventory is contained within the soil adjacent to the unit. Approximately 10 Ci have leached in to the concrete floor and walls.
Site Dimensions: 450 ft (l) x 230 ft (w) x 24 ft (d)

Site Name: 116-B-12
Aliases: 117-B Crib
Site Description: This crib was active from 1961 to 1968. The unit was filled with gravel and covered to grade with clean soil. A large steel vent marks the site.
Waste Types and Amounts: The site received drainage from the confinement system in the 117-B Building seal pits.
Site Dimensions: 10 ft (l) x 10 ft (w) x 10 ft (d)

Site Name: 116-B-13
Aliases: 107-B South Sludge Trench
Site Description: This trench was active in 1952. The unit is a sludge burial site now covered with 6 ft of soil.
Waste Types and Amounts: The site received sludge waste from the 107-B Retention Basin (116-B-11).
Site Dimensions: 50 ft (l) x 50 ft (w) x 10 ft (d)

Site Name: 116-B-14
Aliases: 107-B North Sludge Trench
Site Description: This trench operated in 1948. The unit is a sludge burial site covered with 6 ft of soil.
Waste Types and Amounts: The unit received low-level sludge waste from the 107-B Retention Basins.
Site Dimensions: 120 ft (l) x 10 ft (w) x 10 ft (d)

OPERABLE UNIT 100-BC-1

Site Name:	116-B-15
Aliases:	105-B Fuel Storage Basin Cleanout Percolation Pit 105-B Fuel Storage Discharge Pond 105-B Pond
Site Description:	This pit was operated from November 1984 to December 1985. The unit is an open, excavated pit, rectangular in shape. Soil excavated from the center was used as a berm around its perimeter.
Waste Types and Amounts:	The unit received processed water from the 105-B Fuel Storage Basin. During the cleaning of this basin, the radiologically contaminated shielding water was processed through a process system that utilized ion exchange columns. Before discharging the water to the unit, composite samples were taken to ensure that radionuclide concentrations were below release criteria in Table II of DOE Order 5480.1. No known chemical substances were present in the water; however, chemical analysis during that period was not a standard practice, and there is no evidence that it was performed.
Site Dimensions:	Site Area = 5,000 ft^2 100 ft (l) x 50 ft (w) x 6 ft (d)

Site Name:	116-B-16
Aliases:	111-B Fuel Examination Tank
Site Description:	This storage tank operated in 1968. The unit is constructed of concrete. The floor, foundation, and tank are the only remaining portions of the 111-B. It is not known if the tank was backfilled, but it is believed too have been filled with either sand or concrete prior to abandonment of the building.
Waste Types and Amounts:	The unit is believed to have received wastes similar to those identified in the 116-B-6A (111-B Crib No. 1); i.e., radioactive waste from equipment decontamination, the 11-B Building, and liquid wastes from fuel element spacer decontamination.
Site Dimensions:	Area = 61.3 ft^2 10.67 ft (l) x 5.75 ft (w) x 9 ft (d)

Site Name:	116-C-1
Aliases:	107-C Liquid Waste Disposal Trench
Site Description:	This trench operated from 1952 to 1968.
Waste Types and Amounts:	The site received effluent overflow from the 107-C Retention Basin during reactor outages due to ruptured fuel elements. Beginning in 1955, this site also served the 107-B Retention Basin.
Site Dimensions:	500 ft (l) x 50 ft (w) x 25 ft (d)

OPERABLE UNIT 100-BC-1

Site Name: 116-C-5
Aliases: 107-C Retention Basin
Site Description: This retention basin was operating from 1952 to 1969. The unit consists of two carbon steel tanks, each with a series of steel baffle plates inside to prevent water from channeling across the tank into the discharge line.
Waste Types and Amounts: This site received cooling water effluent from the 105-C Reactor for radioactive decay and thermal cooling prior to release to the Columbia River. Total radionuclide inventories in the vicinity of the basin ranged from 5 to over 400 Ci. Eighty percent of the total radionuclide inventory is contained within the soil adjacent to the unit. Approximately 10 Ci have leached into the sediment.
Site Dimensions: 16 ft deep, 330 ft in diameter

Site Name: 118-B-5
Aliases: Ball 3X Burial Ground
Site Description: This burial ground was in operation in 1953. The site contained one trench and was covered with 5 ft of soil.
Waste Types and Amounts: The site was used for highly contaminated wastes, such as old thimbles and step plugs, that were removed from 105-B Building for the Ball 3X work in 1953.
Site Dimensions: 50 ft (l) x 50 ft (w) x 20 ft (d)

Site Name: 118-B-7
Aliases: 111-B Solid Waste Burial Site
Site Description: This burial ground was in use from 1951 to 1968. A Concrete marker identifies this site.
Waste Types and Amounts: This site received miscellaneous solid waste (decontamination materials and associated equipment).
Site Dimensions: 8 ft (l) x 8 ft (w) x ft (d)

Site Name: 118-B-8
Aliases: 105-B Reactor Building
Site Description: This reactor was in use from 1944 to 1968. This unit consists of: (1) a reactor block, which includes the graphite moderator stack, biological and thermal shields, pressure tubes, and the safety control systems; (2) the irradiated fuel storage basin; and (3) contaminated portions of the reactor building. The building has 3 to 5 ft thick concrete walls around the reactor and concrete block upper walls. Roof construction is reinforced concrete over the inner rod room and rear face enclosure, pre-cast concrete over the rest of the building.
Waste Types and Amounts: This unit contains an estimated 23,500 Ci of radionuclides, 88 tons of lead, 3,000 ft^3 of asbestos, and 500 lb of cadmium.
Site Dimensions: Area = 42,500 ft^2

OPERABLE UNIT 100-BC-1

Site Name:	118-B-9
Aliases:	104-B2 Storage Building
Site Description:	This storage facility operated from 1948 to 1965. The unit is a concrete structure about 10 ft high with special cells in the floor to store casks used in the Pilot P-10 Program. It also housed an air sampling system for the 108-B stack.
Waste Types and Amounts:	The unit contains trace amounts of radioactive waste. Currently it is used to store some slightly contaminated components from B and C Reactors.
Site Dimensions:	24 ft (l) x 12 ft (w)

Site Name:	118-B-10
Aliases:	
Site Description:	The site type is a pit. This site is a 2 to 3 ft raised mound, fenced with a single chain, and marked with underground radiation signs.
Waste Types and Amounts:	
Site Dimensions:	48 ft (l) x 18 ft (w)

Site Name:	120-B-1
Aliases:	105-B Battery Acid Sump
Site Description:	This sump was in use from 1944 to 1969.
Waste Types and Amounts:	The site contained unknown amounts of sulfuric acid from spillage during use and servicing of an emergency power battery bank inside the 105-B Building. The residual liquid and sludge were analyzed for heavy metals in 1986 using the EP Toxicity Test and Cr was found.
Site Dimensions:	Not listed in WIDS

Site Name:	126-B-1
Aliases:	184-B Power House Ash Pit 188-B Ash Disposal Area
Site Description:	This ash pit was in use from 1944 to 1969.
Waste Types and Amounts:	Unknown amounts of coal ash were sluiced to this pit with raw river water. The ash has been analyzed using the EP Toxicity Test in accordance with WAC 173-303, and no hazardous materials were found.
Site Dimensions:	Not listed in WIDS

OPERABLE UNIT 100-BC-1

Site Name:	126-B-2
Aliases:	183-B Clearwells
Site Description:	This demolition and inert landfill is made up of two clearwells separated in the center by a pump room. The clearwells are covered, reinforced concrete and have a capacity of ~10 gal. The pump room is constructed of reinforced concrete and is ~22 ft deep. The clearwells are intact, and the above-ground portion of the pump room has been demolished.
Waste Types and Amounts:	Currently, the pump room is the only portion of this unit containing waste. The waste consists of demolition waste from the above-ground portion of the pump room.
Site Dimensions:	Area = 101,385 ft^2 751 ft (l) x 135 ft (w)

Site Name:	126-B-3
Aliases:	184-B Coal Pit
Site Description:	This demolition and inert landfill began operation in the 1970's and is in operation today. The unit is an excavated pit originally used to store coal for use in the powerhouse. Approximately 75% of this pit has been used for waste disposal and is covered with ~1 ft of pit run backfill material. Approximately 25% is available for use.
Waste Types and Amounts:	This unit contains waste from demolished 100-B facilities. These include released portions of 108-B, 117-B&C, 115-B/C, and 184-B.
Site Dimensions:	Area = 90,000 ft^2 400 ft (l) x 225 ft (w)

Site Name:	126-B-4
Aliases:	B Area Brine and Salt Dilution Pits
Site Description:	The salt-dissolving pit and brine pit were both below-grade concrete vaults with internal void spaces (Brine pit 500 ft^3. dissolving pit 900 ft^3). Now the site is a cleared area and the surface is covered by cobble and coal ashes. Vegetation is annual weeds and cheatgrass. No evidence of the site remains on the surface.
Waste Types and Amounts:	
Site Dimensions:	Not listed in WIDS

OPERABLE UNIT 100-BC-1

Site Name:	128-B-1
Aliases:	100B/C Burning Pit 100-B Burning Pit
Site Description:	This burning pit was in operation from 1943 to 1950.
Waste Types and Amounts:	The site was used for the disposal of non radioactive, combustible materials, such as paint waste, and chemical solvents. This area is believed to have been used for disposal of miscellaneous debris and soil that was excavated during construction of the 107-B and C basins and overflow trenches. The area is not known to have been used as a routine burning area.
Site Dimensions:	100 ft (l) x 100 ft (w) x 10 ft (d)

Site Name:	128-B-2
Aliases:	100-B Burn Pit #2
Site Description:	This burning pit was in operation from 1948 to 1968. The site ranges in width from 30 to 50 ft and is identifiable by a pile of large boulders. There are sandblasting garnet, old paint cans, and evidence of burning in the area.
Waste Types and Amounts:	The site received non radioactive, combustible materials. Old paint cans and sandblast sand can still be seen at the site. Office waste, paint waste, chemicals, and solvent were burned at this site.
Site Dimensions:	Area = 13,500 ft^2 450 ft (l) x 30 ft (w)

Site Name:	128-B-3
Aliases:	100-B Dump Site
Site Description:	This burning pit was in operation from 1944 to 1968. This area is identifiable by a pile of large boulders to the south. It is present in a PNL photograph (45222-11CN) taken during the construction of the 116-C-1 (107-C Overflow Trench).
Waste Types and Amounts:	Coal ash, burning evidence, and demolition rubble can be seen at the surface of the site. A 1952 shop manual was found among the waste.
Site Dimensions:	450 ft (l) x 60 ft (w)

Site Name:	128-C-1
Aliases:	100-C Burning Pit
Site Description:	Broken glass and ash mark the burning pit. Smaller areas very close to the site have had some dumping and small surface burning.
Waste Types and Amounts:	The waste consisted of combustible materials (vegetation, office waste, paint waste, and chemical solvents) and some large metal material, such as hardware, machinery, and other non contaminated miscellaneous equipment.
Site Dimensions:	225 ft (l) x 125 ft (w)

OPERABLE UNIT 100-BC-1

Site Name: 132-B-1
Aliases: 108-B Tritium Separation Facility
Site Description: This building was in use from 1944 to the 1970's. The building was a steel frame and concrete block structure with reinforced concrete foundation and floors. The interior was laid out into many individual rooms that were used for laboratories, offices, and change rooms. The original building was 41 ft above grade, 12 below grade, and 132 ft long, with a 16 ft extension for an additional ventilation supply fan. Also, an annex 60 ft long by 32 ft wide was added to the southwest corner of the original building. Now the site is graded flat. All that remains is a section of concrete foundation with two teardrop-shaped steel plates ~20 to 26 in. in diameter. The foundation is inside an "underground radiation zone".
Waste Types and Amounts: The main radionuclide at the site is tritium.
Site Dimensions: 148 ft (l) x 32 ft (w)

Site Name: 132-B-2
Aliases: 116-B Reactor Exhaust Stack
Site Description: This stack was in operation from 1944 to 1968. Part of the 105-B Reactor Gas and Exhaust System, the unit is constructed of reinforced concrete with a base diameter of ~16 ft. The unit is still standing.
Waste Types and Amounts: Until the 117 Filter Building was built in 1960, air moving from the least contaminated zones through increasingly contaminated zones was discharged to the unit unfiltered. The unit received low-level contamination from the reactor.
Site Dimensions: 200 ft (l) x 16.58 ft (w)

Site Name: 132-B-3
Aliases: 108-B Ventilation Exhaust Stack
Site Description: A burial trench was excavated north of the stack. The dimensions are 250 ft long, 30 ft wide, and 18 ft deep. The stack was built of reinforced concrete. The maximum wall thickness was 2.5 ft at the base. It rested on a double-octagon base that extended 10.25 ft below grade. The upper octagon was 25 ft across the flats and 3.25 ft thick. The lower octagon was 34 ft across the flats and 7 ft thick. The stack contained a stainless steel liner. Supported by concrete pillars, it was located 6 ft above the base and extended up 6 more feet.
Waste Types and Amounts:
Site Dimensions: 300 ft (l) x 18 ft (w)

OPERABLE UNIT 100-BC-1

Site Name: 132-B-4
Aliases: 117-B Filter Building
Site Description: This building was in operation from 1961 to 1968. The unit was a reinforced concrete structure, 35 ft high, and almost completely below grade. Approximately 8 ft was above grade with an earth and gunnite berm. The maximum thickness of the walls and floors was 2 ft, with the majority being 1 ft thick or less. The ducts were made of reinforced concrete with a maximum wall thickness of 12 in. The inlet tunnel was ~110 ft long, and the exhaust tunnel was ~80 ft long. The site now has the appearance of a gravel parking lot.
Waste Types and Amounts: Total radionuclide inventory in this unit is estimated to be 92 nCi. The radionuclides comprising this inventory are H-3, C-14, Cs-137, Sr-90, Pu-239/240. Of these radionuclides, Sr-90 is the most restrictive in the ARCL calculations. Co-60, Eu-152, Eu-153, Eu-155 were not identified in any of the samples analyzed.
Site Dimensions: 59 ft (l) x 39 ft (w)

Site Name: 132-B-5
Aliases: 115-B/C Gas Recirculation Facility
Site Description: This building was in use from 1952 to 1968. The unit consisted of the vacuum and pressure seal pit and tunnels. It was a single-story reinforced concrete structure with a basement. It was 20 ft above and 11 ft below grade, and a width ranged from 72 ft to 98 ft.
Waste Types and Amounts: The resident radionuclides are H-3, C-14, Co-60, Sr-90, Cs-137, Eu-152, and Pu-239.
Site Dimensions: 168 ft long

Site Name: 132-B-6
Aliases: 1904-B2 Outfall Structure
116-B-8
Site Description: This outfall Structure was in operation from 1944 to 1968. The unit consisted of an open concrete sump and effluent lines that ran from the sump to approximately mid-channel of the river. It also included a concrete spillway that terminated at the top of the river bank. If the main line plugged, the effluent would overflow into the spillway that lead to a large riprap area at the top of the river bank and then to the river.
Waste Types and Amounts: The unit received and discharged reactor coolant effluent wastes to the river.
Site Dimensions: 27 ft (l) x 14 ft (w)

OPERABLE UNIT 100-BC-1

Site Name:	132-C-2
Aliases:	1904-C Outfall 116-C-4
Site Description:	The unit contains a riprap overflow down to the river consisting of basalt boulders. The area from the roadway to the top of the riprap is marked by concrete posts with "Caution Underground Radioactive Material". These posts continue down to the river. The area above the riprap is marked with metal posts.
Waste Types and Amounts:	Not listed in WIDS
Site Dimensions:	Not listed in WIDS

Site Name:	600-34
Aliases:	100-B Baled Tumbleweed Disposal Site
Site Description:	This dumping area consists of a 10-15 ft deep borrow or gravel pit.
Waste Types and Amounts:	The main concentration of waste is located in the eastern section of the pit, however there is minor surface rubble spread over the pit floor. Visible wastes include: wood (timbers and ties), piles of silty-type material; concrete; electrical insulators and a 5 gal. plastic bucket (090-NRC Paragon Molding Company Melrose Park, Ill.) Pre-Hanford waste is also evident including barbed wire and old piece of what appears to be farm equipment, and remnants of wire wrapped wooden irrigation pipe.
Site Dimensions:	Area = 240,000 ft^2 800 ft (l) x 300 ft (w)

Site Name:	1607-B1
Aliases:	1607-B1 Septic Tank and Associated Drain Field 124-B-1 1607-B1 Sanitary Sewer System
Site Description:	This septic tank operated from 1944 to 1960. The unit includes a tile field. It is 11 ft deep, constructed of reinforced concrete, and has a 125-person capacity (35 gal per capita) with an average detention period of 24 hours. The walls and floor are 10 in. thick. The tile field is constructed of 4-in. vitrified pipe, concrete pipe, or drain tile with a minimum of 8 linear feet per capita. The laterals are open-jointed and spaced 8 ft apart.
Waste Types and Amounts:	The unit received unknown amounts of sanitary sewage from 1701-B Badgehouse (security checkpoint), 1709-B Fire Station, and 1720-B Patrol Change Room and offices.
Site Dimensions:	14 ft (l) x 7 ft (w)

OPERABLE UNIT 100-BC-1

Site Name:	1607-B2
Aliases:	1607-B2 Septic Tank and Associated Drain Field 124-B-2 1607-B2 Sanitary Sewer System
Site Description:	This septic tank has been active since 1944. The unit includes a tile field. It is 13 ft deep, constructed of reinforced concrete, and has a 450-person capacity (35 gal per capita) with an average detention period of 24 hours. The walls and floor are 10 in. thick. The tile field is constructed of 4 in. vitrified pipe, concrete pipe, or drain tile with a minimum of 8 linear feet per capita. The laterals are open jointed and spaced 8 ft apart.
Waste Types and Amounts:	This unit receives sewage from 100 B/C Area office buildings, 105-B Reactor Building, and 190-B Pumphouse. (All office buildings have been removed; however, the sewer lines to the respective buildings still exist.) The flow rate to the unit is estimated at less than 35 gal/d.
Site Dimensions:	25 ft (l) x 11.5 ft (w)

Site Name:	1607-B3
Aliases:	1607-B3 Septic Tank and Associated Drain Field 124-B-3 1607-B3 Sanitary Sewer System
Site Description:	This septic tank operated from 1944 to 1974. This unit included a tile field. It was 10 ft 5 in. deep, constructed of reinforced concrete, and had a 48-person capacity (35 gal per capita) with an average detention period of 24 hours. The walls and floor were 10 in. thick. The tile field is constructed of 4-in. vitrified pipe, concrete pipe, or drain tile with a minimum of 8 linear feet per capita. The laterals are open jointed and spaced 8 ft apart.
Waste Types and Amounts:	This unit received sanitary sewage from 184-B Powerhouse, amount unknown.
Site Dimensions:	9.5 ft (l) x 4.5 ft (w)

OPERABLE UNIT 100-BC-1

Site Name: 1607-B4

Aliases: 1607-B6
1607-B6 Septic Tank and Associated Drain Field
124-B-6
1607-B6 Sanitary Sewer System
1607-B6 Septic Tank

Site Description: This septic tank has been operating since 1944. This unit included a tile field. It is 8 ft 4 in. deep, constructed of reinforced concrete, and has a 10-person capacity (35 gal per capita) with an average detention period of 24 hours. The walls are 8 in. thick and the floor is 6 in. thick. The tile field is constructed of 4-in. vitrified pipe, concrete pipe, or drain tile with a minimum of 8 linear feet per capita. The laterals are open jointed and spaced 8 ft apart.

Waste Types and Amounts: This unit receives sanitary sewage from 151-B Electrical Distribution Facility. The flow rate to the unit is estimated at less than 35 gal/d.

Site Dimensions: 6 ft (l) x 3 ft (w)

Site Name: 1607-B5

Aliases: 1607-B4
1607-B4 Septic Tank and Associated Drain Field
124-B-4
1607-B4 Sanitary Sewer System

Site Description: This septic tank has been operating since 1944. This unit includes a tile field. It is 8 ft 4 in. deep, constructed of reinforced concrete, and has a 6 person capacity (35 gal per capita) with an average detention period of 24 hours. The walls are 8 in. thick and the floor is 6 in. thick. The tile field is constructed of 4-in. vitrified pipe with a minimum of 8 linear feet per capita. The laterals are open jointed and spaced 8 ft apart.

Waste Types and Amounts: This unit receives sanitary sewage from 181-B/C River Pumphouse. The flow rate is estimated at 35 gal/d.

Site Dimensions: 4 ft (l) x 2 ft (w)

OPERABLE UNIT 100-BC-1

Site Name:	1607-B6
Aliases:	1607-B5 1607-B5 Septic Tank and Associated Drain Field 124-B-5 1607-B5 Sanitary Sewer System
Site Description:	This septic tank operated from 1944 to 1988. This unit includes a tile field. It is 8 ft 4 in. deep, constructed of reinforced concrete, and has a 10-person capacity (35 gal per capita) with an average detention period of 24 hours. The walls are 8 in. thick and the floor is 6 in. thick. The tile field is constructed of 4-in. vitrified pipe, concrete pipe, or drain tile with a minimum of 8 linear feet per capita. The laterals are open jointed and spaced 8 ft apart.
Waste Types and Amounts:	This unit receives 35 gal/d of sanitary sewage from the 182-B Pump Station. It also received sewage from 183-B Headhouse, which was decommissioned in 1987.
Site Dimensions:	8 ft (l) x 4 ft (w)
Site Name:	1607-B7
Aliases:	1607-B7 Septic Tank and Associated Drain Field 1607-B7 Sanitary Sewer System
Site Description:	This septic tank operated from 1951 to 1969. This unit includes a tile field. It is 8 ft 3 in. deep, constructed of reinforced concrete, and has a 12-person capacity (35 gal per capita) with an average detention period of 24 hours. The walls are 8 in. thick and the floor is 6 in. thick. The tile field is constructed of 4-in. vitrified pipe, concrete pipe, or drain tile with a minimum of 8 linear feet per capita. The laterals are open jointed and spaced 8 ft apart.
Waste Types and Amounts:	The unit received sanitary sewage from 183-B Water Treatment Plant, amount unknown.
Site Dimensions:	6 ft (l) x 3 ft (w)

OPERABLE UNIT 100-BC-2

Site Name: 116-C-2A
Aliases: 105-C Pluto Crib
116-C-2
Site Description: This crib operated from 1952 to 1968 or 1969. The unit contains gravel and fill.
Waste Types and Amounts: The site received an unknown volume of contaminated wastes from the decontamination of dummy fuel elements on the wash pad, contaminated water from the 105-C Irradiated Fuel Examining facilities, and 105-C Reactor rear face liquid wastes.
Site Dimensions: Area = 14,000 ft^2
140 ft (l) x 100 ft (w) x 20 ft (d)

Site Name: 116-C-2B
Aliases: 105-C Pluto Crib Pump Station
116-C-2-1
Site Description: This pump station was in operation from 1952 to 1969.
Waste Types and Amounts: The unit received wastes from 105-C and pumped it into 116-C-2C (105-C Pluto Crib Sand Filter)
Site Dimensions: Area = 80 ft^2
10 ft (l) x 8 ft (w)

Site Name: 116-C-2C
Aliases: 105-C Pluto Crib Sand Filter
116-C-2-2
Site Description: This sand filter was in use from 1952 to 1969. The structure is an open bottom concrete box placed in a sand and gravel pit. Contaminated water was spread over the surface of the sand filter media by distribution trays. It is covered with concrete shielding slabs.
Waste Types and Amounts: The site received contaminated wastes from the decontamination of dummy fuel elements on wash pad and effluents from 105-C Irradiated Fuel Examination facilities.
Site Dimensions: Area = 368 ft^2
23 ft (l) x 16 ft (w) x 6 ft (d)

Site Name: 116-C-3
Aliases: 105-C Chemical Waste Tanks
Site Description: The unit consists of two storage tanks with 27,000 gal capacity.
Waste Types and Amounts: Originally, the unit was installed to receive liquid waste from the 105-C Fuel Examination Facility; however, the unit was never used to receive waste.
Site Dimensions: Not listed in WIDS

OPERABLE UNIT 100-BC-2

Site Name:	116-C-6
Aliases:	105-C Fuel Storage Basin Cleanout Percolation Pit 105-C Pond
Site Description:	This pit was in operation from December 1984 to August 1985. The unit is an L-shaped, open excavation pit. Soil was excavated from the center and used as a berm around its perimeter. The approximate side lengths are 100 ft by 100 ft by 45 ft by 50 ft by 55 ft by 50 ft.
Waste Types and Amounts:	This unit received processed water from the 105-C Fuel Storage Basin cleanout. During this effort, the radiologically contaminated shielding water in the basin was processed through a process system that utilized ion exchange columns. Before discharging the water to the unit, composite samples were taken to ensure that radionuclide concentrations were below release criteria in Table II of DOE Order 5480.1. No known hazardous substances were present in the water; however, chemical analysis during that period was not a standard practice, and there is no evidence that it was performed.
Site Dimensions:	Area = 7,250 ft^2 6 ft deep

Site Name:	118-C-2
Aliases:	105-C Ball Storage Tank
Site Description:	This storage tank was in use in 1969. The unit is buried in the ground with two visible standpipes and a shielding mound ~2ft above ground level.
Waste Types and Amounts:	Highly irradiated boron steel balls were stored in the unit for radioactive decay and subsequent burial. The balls are still present.
Site Dimensions:	5 ft deep and 6 ft in diameter

Site Name:	118- C-3
Aliases:	105-C Reactor Building
Site Description:	This reactor was in use from 1952 to 1969. The unit consists of: 1) a reactor block, which includes the graphite moderator stack, biological and thermal shields, pressure tubes, and the safety and control system; 2) the irradiated fuel storage basin; and 3) contaminated portions of the reactor building. The reactor building has 3 to 5 ft thick concrete walls around the reactor and corrugated asbestos/cement siding upper walls. Roof construction is reinforced concrete over the inner rod room and the rear face enclosure and poured insulating concrete over the rest of the building.
Waste Types and Amounts:	The unit contains an estimated 25,000 Ci of radionuclides, 105 tons of lead, and 7,000 ft^3 of asbestos.
Site Dimensions:	Area = 65,000 ft^2

OPERABLE UNIT 100-BC-2

Site Name:	118-C-4
Aliases:	105-C Horizontal Control Rod Storage Cave
Site Description:	This storage facility was in use from 1950 to 1969. The unit is a concrete tunnel covered with a 4 ft thick mound of earth.
Waste Types and Amounts:	The tunnel was used for temporary storage for radioactive decay pending subsequent disposal. Some miscellaneous components are currently in the rod cave. The radiation reading at the entrance to the tunnel with the door open is 5 mR/h.
Site Dimensions:	Area = 1,000 ft^2 40 ft (l) x 25 ft (w)

Site Name:	132-C-1
Aliases:	116-C Reactor Exhaust Stack 105-C Reactor Stack
Site Description:	This stack was used from 1952 to 1969.
Waste Types and Amounts:	The interior of the unit contained ~2.8 mCi of radioactive materials.
Site Dimensions:	200 ft (l)

Site Name:	132-C-3
Aliases:	117-C Filter Building
Site Description:	This building was in use from 1961 to 1969. The unit was a reinforced concrete structure, 35 ft high, and almost completely below grade. Approximately 8 ft was above grade. The maximum thickness of the walls and floor was 2 ft, with the majority being 1 ft thick or less. The duct were made of reinforced concrete with a maximum wall thickness of 12 in. The inlet tunnel was ~40 ft long, and the exhaust tunnel was ~60 ft long. The site now resembles a gravel parking lot.
Waste Types and Amounts:	Total radionuclide inventory in this unit is estimated to be 0,84 mCi. The radionuclides comprising are H-3, C-14, Co-60, Cs-137, Sr-90, Eu-154, Eu-152, and Pu-239/240. Of these radionuclides, Sr-90 is the most restrictive in the ARCL calculations.
Site Dimensions:	59 ft (l) x 39 ft (w)

Site Name:	600-33
Aliases:	105-C Reactor Test Loop Burial Site
Site Description:	This burial ground was in use in 1963. It consists of a burial ground for discarded radioactive test loop.
Waste Types and Amounts:	The waste consists of radioactive test loop. The test loop is approximately 18-20 ft long and consists of various sizes of stainless steel tubing. The test loop may have dose rates in excess of 100 R/h.
Site Dimensions:	Not listed in WIDS

OPERABLE UNIT 100-BC-2

Site Name:	1607-BB
Aliases:	1607-B8 Septic Tank and Associated Drain Field 124-C-2 1607-B8 Sanitary Sewer System
Site Description:	This septic tank was used from 1951 to 1969. The unit includes a tile field.
Waste Types and Amounts:	The unit received sanitary sewage from 190-C Pumphouse, amount unknown.
Site Dimensions:	Not listed in WIDS

Site Name:	1607-B10
Aliases:	
Site Description:	This septic tank was in use in 1952. The unit includes a drain field. It is enclosed with steel marker posts that are painted yellow and outline a 15 by 30 ft perimeter. "Septic Tank" and "Drain Field" labels are also present. A steel pipe riser 10 in. in diameter and 33 in. above grade also marks the location of the tank.
Waste Types and Amounts:	There were no know discharges of hazardous chemicals or radionuclides. The unit received only sanitary sewer wastes from the headhouse of the 183-C Water Treatment Plant.
Site Dimensions:	Not listed in WIDS

Site Name:	1607-B11
Aliases:	
Site Description:	This septic tank was in use in 1952. The unit includes a drain field. It is enclosed with steel marker posts that are painted yellow and outline a 15 by 30 ft perimeter. "Septic Tank" and "Drain Field" labels are also present. A steel pipe riser 10 in. in diameter and 18 in. above grade also marks the location of the tank.
Waste Types and Amounts:	There were no know discharges of hazardous chemicals or radionuclides. The unit received only sanitary sewer wastes from the Filter Building and Pump Room 183-C Water Treatment Plant.
Site Dimensions:	Not listed in WIDS

OPERABLE UNIT 100-BC-3

Site Name: 118-B-2
Aliases: Construction Burial Ground No. 1
Site Description: This burial ground was active from 1952 to 1956. The unit contains a trench running east and west.
Waste Types and Amounts: The unit was used for disposal of dry waste from 107-B Basin repair work and for wastes from 115-B alterations by minor construction.
Site Dimensions: 60 ft (l) x 30 ft (w) x 10 ft (d)

Site Name: 118-B-3
Aliases: Construction Burial Ground No. 2
Site Description: This burial ground was active from 1956 to 1960. The unit contains many trenches running east and west.
Waste Types and Amounts: The unit was used for the disposal of solid waste from the effluent line modification and for disposal of reactor generated solid waste during various modification programs.
Site Dimensions: 350 ft (l) x 275 ft (w) x 20 ft (d)

Site Name: 118-B-4
Aliases: 105-B Spacer Burial Ground
Site Description: This burial ground was active from 1956 to 1958. The nit consists of six dummy storage pits installed below ground. The pits are constructed of metal culverts 15 ft deep and 6 ft in diameter.
Waste Types and Amounts: The unit was used for disposal of fuel spacers.
Site Dimensions: 50 ft (l) x 30 ft (w) x 15 ft (d)

Site Name: 118-B-6
Aliases: 108-B Solid Waste Burial Ground
Site Description: This burial ground was active from 1952 to 1953. The unit consisted of two concrete pipes, 18 ft long and 6 ft in diameter, buried vertically in the ground. A light metal cap was placed over pipes in the concrete pad.
Waste Types and Amounts: The unit was used for the disposal of tritium wastes and tritium recovery process waste, primarily aluminum target cans and lead target melting pots.
Site Dimensions: 40 ft (l) x 40 ft (w) x 20 ft (d)

OPERABLE UNIT 100-BC-4

Site Name:	118-B-1
Aliases:	105-B Burial Ground
Site Description:	This burial ground was used from 1944 to 1973. The site consists of 21 trenches running east-west, 3 trenches running north-south, perforated burials, and spline silos. Perforated burials were generally in excavations shored with railroad ties. Spline silos were metal culverts with a 5 to 6 ft radius. Typically, the trenched are 300 ft long by 20 ft wide by 20 ft deep with a 20 ft space between them.
Waste Types and Amounts:	The spline silos received metallic wastes. The Trenches received general reactor waste from 100-B and 100-N reactors that included the following: aluminum tubes, irradiated facilities, thermocouples, vertical and horizontal aluminum thimbles, stainless steel gunbarrels and expendables, plastic, wood, cardboard.
Site Dimensions:	Area = 1,000 ft^2 321 ft (l) x 20 ft (w)

Site Name:	118-C-1
Aliases:	105-C Burial Ground
Site Description:	This burial ground was used from 1953 to 1969. The site contains many trenches running north and south and 6 pits (10 ft by 10 ft). Typically, the trenches were 300 by 200 by 20 ft with a 20 ft space between each trench.
Waste Types and Amounts:	The unit was used for miscellaneous solid waste from 105-C Building that includes pressure tubes, aluminum spacers, control rods, soft waste, and reactor hardware.
Site Dimensions:	510 ft (l) x 400 ft (w) x 15 ft (d)

Site Name:	1607-B9
Aliases:	1607-B9 Sanitary Sewer System 124-c-3
Site Description:	This septic tank includes a tile field.
Waste Types and Amounts:	This unit received sanitary sewage from 105-C Reactor Building, amount unknown.
Site Dimensions:	Not listed in WIDS

OPERABLE UNIT 100-DR-1

Site Name: 116-D-1A
Aliases: 105-D Storage Basin Trench #1
Site Description: This trench operated from 1947 to 1952.
Waste Types and Amounts: The site received contaminated water and sludge from 105-D Fuel Storage Basin.
Site Dimensions: 130 ft (l) x 10 ft (w) x 6 ft (d)

Site Name: 116-D-1B
Aliases: 105-D Storage Basin Trench #2
Site Description: This trench operated from 1953 to 1967.
Waste Types and Amounts: The site received contaminated water and sludge from 105-D Fuel Storage Basin and contaminated liquid waste from the decontamination of fuel spacers and reactor hardware.
Site Dimensions: 1,000 ft^2 (area) 100 ft (l) x 10 ft (w) x 15 ft (d)

Site Name: 116-D-2
Aliases: 105-D Pluto Crib
Site Description: This crib operated from 1950 to 1952. The unit is sand filled and shored with railroad ties. There may be two Pluto crib sites. The first one is suspected to be just a hole in the ground and used only one time. This was the one sampled (N91900 W52640). N91970 W52610 is thought to be the main crib but was not visible in 1976 during sampling.
Waste Types and Amounts: The site received effluent water from isolated tubes containing ruptured fuel elements.
Site Dimensions: 10 ft (l) x 10 ft (w) x 10 ft (d)

Site Name: 116-D-3
Aliases: 108-D Crib #1
Site Description: The French drain operated from 1951 to 1967.
Waste Types and Amounts: The site received low-level fission product wastes from a contaminated maintenance shop and cask decontamination pad in the 108 Building.
Site Dimensions: 5 ft (d) x 3 ft (w)

Site Name: 116-D-4
Aliases: 108-D Crib #2
Site Description: This French drain operated from 1956 to 1957.
Waste Types and Amounts: The site received low-level fission product wastes from contaminated maintenance shops in the 108 buildings.
Site Dimensions: 5 ft (d) x 3 ft (w)

OPERABLE UNIT 100-DR-1

Site Name:	116-D-5
Aliases:	1904-D Outfall Structure
Site Description:	The outfall structure operated from 1944 to 1967. The unit is an open, reinforced, compartmentalized concrete water box with a reinforced concrete overflow spillway to the shoreline. It is enclosed with a chain-link security fence and an aviary exclusion mesh cover.
Waste Types and Amounts:	This unit received reactor coolant water from the 107-D Retention Basin and waste water from the 100-D Water Support Facilities: 183, 190, etc.
Site Dimensions:	Area = 1.440 ft^2 60 ft (l) x 24 ft (w)

Site Name:	116-D-6
Aliases:	105-D Cusion Corridor French Drain
Site Description:	This French Drain was used from 1961 to 1967.
Waste Types and Amounts:	The site received domestic water from the changing room and water from the mask decontamination station.
Site Dimensions:	3 ft deep and 3 ft in diameter

Site Name:	116-D-7
Aliases:	107-D Retention Basin 107-D
Site Description:	This retention basin was used from 1944 to 1967. The unit is a concrete basin with a vertical concrete baffle constructed lengthwise in the middle of the basin. The floor consists of concrete slabs, their joints originally closed with neoprene water seals. The walls slope from the floor to a point 10 ft above the floor level with the remaining wall (~10 ft) being vertical. The sloping wall sections are 4 in. thick, and the vertical walls are reinforced construction with a minimum thickness of 1 ft at the top and 5.75 ft at the bottom.
Waste Types and Amounts:	This site retained cooling water effluent from the 105-D Reactor for radioactive decay and thermal cooling prior to release to the Columbia River. Total radionuclide inventories in the vicinity of the basin ranged from 5 to over 400 Ci. Seventy percent of the total radionuclide inventory is contained within the soil adjacent to the unit. Approximately 10 Ci have leached into the concrete walls and floor.
Site Dimensions:	Area = 107,410 ft^2 467 ft (l) x 230 ft (w) x 24 ft (d)

OPERABLE UNIT 100-DR-1

Site Name:	116-D-9
Aliases:	117-D Crib 117-D
Site Description:	This crib was used from 1960 to 1967. The site is filled with gravel and covered to grade with clean soil. A large steel vent cap is located in the center of the site.
Waste Types and Amounts:	The site received drainage from confinement system 117 Building sea pits.
Site Dimensions:	Area = 100 ft^2 10 ft (l) x 10 ft (w) x 10 ft (d)

Site Name:	116-D-10
Aliases:	105-D fuel Storage Basin Cleanout Percolation Pit 105-D Fuel Storage Discharge Ponds 105-D Ponds
Site Description:	This pit was used from July 1984 until September 1984. The unit consists of two open excavated pit with a crossover channel connecting them. The west excavation was 35 ft long, 22 ft wide, and 3 ft deep. The east excavation was 50 ft long, 24 ft wide, and 4 ft deep. Both pits have been backfilled and graded to resemble natural terrain.
Waste Types and Amounts:	The unit received processed water from the 105-D Fuel Storage Basin. During the cleanout of this basin, the radiologically contaminated shielding water was processed through a process system using g ion exchange columns. Before discharging the water to the unit composite samples were taken to insure that radionuclide concentration were below release criteria in Table II of DOE Order 5480.1. No known hazardous substances were present in the water; however, chemical analysis was not a standard practice during that period, and there is no evidence that one was performed. It should be noted that water removed from the 1608-D is believed to be comparable to the storage basin water, and EP-TOX testing results for the 1608-D water were negative.
Site Dimensions:	Not listed in WIDS

Site Name:	116-DR-1
Aliases:	107-DR Liquid Waste Disposal Trench #1
Site Description:	This trench was used from 1950 or 1951 to 1967.
Waste Types and Amounts:	The site received effluent from the 107-D and 107-DR retention basins after 105-D and 105-DR had outages due to ruptured fuel elements.
Site Dimensions:	Area = 4,500 ft^2 300 ft (l) x 15 ft (w) x 20 ft (d)

OPERABLE UNIT 100-DR-1

Site Name:	116-DR-2
Aliases:	107-DR Liquid Waste Disposal Trench #2
Site Description:	This trench was used from 1952 to 1967.
Waste Types and Amounts:	The site received effluent overflow from the 107-D and 107-DR retention basins at times of high activity due t fuel element failure.
Site Dimensions:	Area = 1,500 ft^2 150 ft (l) x 10 ft (w) x 20 ft (d)

Site Name:	116-DR-5
Aliases:	1904-DR Outfall Structure 1904-DR
Site Description:	This outfall structure was used from 1950 to 1965. The unit is an open, reinforced, compartmentalized concrete water box with a reinforced concrete overflow spillway to the shoreline.
Waste Types and Amounts:	This unit received reactor coolant from the 107-DR Retention Basin.
Site Dimensions:	Area = 378 ft^2 27 ft (l) x 14 ft (w)

Site Name:	116-DR-9
Aliases:	107-DR Retention Basin 107-DR
Site Description:	This retention basin was in use from 1950 from 1965. The unit is an open concrete basin with a vertical concrete baffle constructed lengthwise in the middle of the basin. The floor consists of concrete slabs, their joints originally closed with neoprene water seals. The walls slope from the floor to a point 10 ft above the floor level with the remaining wall (~10 ft) being vertical. The sloping wall sections are 4 in. thick, and the vertical walls are reinforced construction with a minimum thickness of 1 ft at the top and 5.75 ft at the bottom.
Waste Types and Amounts:	This site received cooling water effluent from the 105-DR Reactor for radioactive decay and thermal cooling prior to release to the Columbia River. Total radionuclide inventories in the vicinity of the basin ranged from 5 to over 400 Ci. Seventy percent of the total radionuclide inventory is contained within the soil adjacent to the unit. Approximately 10 Ci have leached into the concrete floor and walls.
Site Dimensions:	Area = 163,800 ft^2 600 ft (l) x 273 ft (w)

OPERABLE UNIT 100-DR-1

Site Name:	118-D-6
Aliases:	105-D Reactor Building
Site Description:	This reactor was in use from 1944 to 1967. The unit consists of: 1) a reactor block, which includes the graphite moderator stack, biological and thermal shields, pressure tubes, and the safety and control systems; 2) the irradiated fuel storage basin; and 3) contaminated portions of the reactor building.
Waste Types and Amounts:	The unit contains an estimated 21,500 Ci of radionuclides, 94 tons of lead, and 100 ft^3 of asbestos.
Site Dimensions:	Area = 42,500 ft^2

Site Name:	120-D-1
Aliases:	100-D Ponds
Site Description:	This pond has been in use since 1977.
Waste Types and Amounts:	This site receives 183-D Sandfilter backwash (nonhazardous), small quantities of filtered, chlorinated water from hydraulic test loops and fuel discharge trampoline tests. The estimated flow rate is 45,000 gal/d. Demineralizer recharge effluent (corrosive) from two sources were released at intervals of once every 2 to 3 yr for one regenerate source and once every 6 yr for the other.
Site Dimensions:	Not listed in WIDS

Site Name:	120-D-2
Aliases:	186-D Waste Acid Reservoir
Site Description:	This storage tank was constructed of acid proof brick, 3-ply waterproof membrane, vit pipe, #8 lead flashing, and gunnite. The sides of the reservoir were sloped 2:1 from 5 ft below grade level to the bottom. At present (6-21-91), the site area is covered with gravel and annual weeds. No evidence remains on the surface of the building structure. A brick manhole at the site may have been associated with the structure.
Waste Types and Amounts:	This unit was never used for waste acid storage. No records have been found to document the disposal of waste of any kind in this facility. No written documentation has been found concerning the disposal of lead flashing that was used for the construction of the waste acid reservoir; however, it is assumed that the lead flashing was disposed in situ during the demolition of the 186-D facility.
Site Dimensions:	Area = 8,525 ft^2 92.33 ft (l) x 92.33 ft (w) x 14 ft (d)

OPERABLE UNIT 100-DR-1

Site Name:	126-D-1
Aliases:	184-D Powerhouse Ash Pit 188-D Ash Disposal Area 100-D Ash Disposal Basin
Site Description:	This ash pit was used from 1950 to 1960.
Waste Types and Amounts:	This site received an unknown amount of coal ash that was sluiced to pits with raw river water from the 184-D Powerhouse. The ash has been determined by testing in accordance with WAC 173-303 to be nonextraction process (EP) toxic.
Site Dimensions:	Not listed in WIDS

Site Name:	126-D-2
Aliases:	184-D Coal Pit
Site Description:	This demolition and Inert Landfill was used from the 1970's until 1986. The unit is an excavated pit originally used to store coal for the powerhouse. This unit is full. It is covered with ~1 ft of pit run backfill material and graded to conform with the natural terrain.
Waste Types and Amounts:	The unit contains demolition and inert waste from demolished facilities in and around 100-D. These include such facilities as: 184-D (including Stacks), 108-D, released portions of the 115-D/DR, 186-D, etc. Of al the demolition and inert landfills in the areas, this one has the highest potential of containing hazardous waste. It was active for many years and was known to have received waste from 100-N as well as the maintenance facility at 189-D.
Site Dimensions:	Not listed in WIDS

Site Name:	126-D-3
Aliases:	D Area Brine and Salt Dilution Pits
Site Description:	The salt dissolving pit and brine pit were below-grade concrete vaults with internal void spaces (brine pit 500 ft^3, dissolved pit 900 ft^3). No evidence of the site remains on the surface.
Waste Types and Amounts:	
Site Dimensions:	Not listed in WIDS

Site Name:	128-D-2
Aliases:	
Site Description:	The site is a large landfill area with evidence of surface burning. It has no definite boundaries but approximately one area. The site is marked with signs of plant stress, depressions, and berms.
Waste Types and Amounts:	Some pieces of reactor hardware and graphite blocks were found at the site (not contaminated).
Site Dimensions:	Area = 58,000 ft^2 240 ft (l) x 240 ft (w)

OPERABLE UNIT 100-DR-1

Site Name: 130-D-1
Aliases: 1716-D Gasoline Storage Tank
1706-D Gasoline Storage Tank
Site Description: This storage tank was in use from 1944 to 1968. The unit is a steel underground storage tank with a capacity between 1,000 and 4,900 gal.
Waste Types and Amounts: The unit was used for storage of leaded gasoline (product).
Site Dimensions: Not listed in WIDS

Site Name: 132-D-1
Aliases: 115-D/DR Gas Recirculating Facility
Site Description: This building was used from 1944 to 1967. The unit consisted of a building, the vacuum and pressure seal pit, and tunnels. The building was a single story, reinforced concrete structure, 20 ft high, with a basement. At ground level, an operating gallery ran the length of the building and was flanked on either side by cells that contained the gas processing equipment. The cells, including walls, ceilings and floors, were constructed of reinforced concrete slabs with composition surfaces. at right angles to the operating gallery and extending across the full width of the buildings end, the fan room was constructed of concrete block and contained the ventilation fan, air compressor, office, locker room, etc. At each end of the basement, a tunnel containing the gas recirculating piping lead to the reactors. The tunnel to 105-D was 12 ft wide by 6.5 ft high. The tunnel to 105-DR was 5 ft wide. Connected to and part of the 105-D tunnel was the vacuum and pressure seal pit. Also, the tunnel formed part of the 1608-D Lift Station. Presently, the site looks like a gravel parking lot and is free of any debris.
Waste Types and Amounts: The resident radionuclides are tritium, C-14, Co-60, Sr-90, Cs-137, Eu-152, and Pu-239.
Site Dimensions: 168 ft (l) x 98 ft (w) 11 ft (d)

Site Name: 132-D-2
Aliases: 117-D Filter Building
Site Description: This building was in use from 1961 to 1967. The unit was a reinforced concrete structure, 35 ft high, and almost completely below grade. About 8 ft was above grade. The maximum thickness of the walls and floors was 2 ft, with the majority 1 ft thick or less. The ducts were made of reinforced concrete with a maximum wall thickness of 12 in. The inlet duct was 115 ft long, and the exhaust duct was 92 ft long. The site now resembles a gravel parking lot.
Waste Types and Amounts: Total radionuclide inventory in the 117-D building was estimated to be 3.9E-3 Ci. The radionuclides comprising this figure are H-3, C-14, Co-60, Sr-90, Cs-137, Eu-152, and Pu-239.
Site Dimensions: 59 ft (l) x 39 ft (w)

OPERABLE UNIT 100-DR-1

Site Name:	132-D-3
Aliases:	1608-D Waste Water Pumping Station 1608-D Effluent Pumping Station
Site Description:	This pump station was used from 1944 to 1965. Prior to decommissioning, the structure extended 4 ft above grade and 32 ft below grade. The walls and floor were constructed of reinforced concrete and the roof was constructed of a wood frame with composition surface. The facility included an accumulation sump, which supplied three separate sumps.
Waste Types and Amounts:	This unit received water from reactor building drains containing trace amounts of low-level radionuclides and decontamination chemicals. Radionuclides were primarily miscellaneous fission and activation products. The decontamination chemicals consisted of sodium fluoride, oxalic acid, and citric acid. Water was pumped from the reactor collection pits into the reactor effluent lines near the reactor building and became part of the 107-D effluent that was discharged to the Columbia River.
Site Dimensions:	Area = 400 ft^2 20 ft (l) x 20 ft (w)

Site Name:	132-D-4
Aliases:	116-D Reactor Exhaust Stack
Site Description:	This stack was in use from 1944 to 1967. The unit is a monolithic, reinforced concrete structure with a maximum wall thickness of 1.5 ft at the base. It rests on a double octagon-shaped base that extends 17.5 ft below grade. An opening at the base provides access to its interior portion. This opening is fitted with a steel door.
Waste Types and Amounts:	This unit was used to exhaust confinement air that originated from the work areas in the 105-D Reactor Building. The interior of the stack contains an unknown quantity of low-level radioactive materials.
Site Dimensions:	200 ft (l) x 16.58 ft (w)

Site Name:	628-3
Aliases:	
Site Description:	This burning pit is roughly oval. The center is distinguished by a 4 ft depression. The depression shows signs of severe plant stress and soil discoloration. The depression, as well as the area around it, is littered with debris. It appears that at one time cat tractors bulldozed some of the surrounding soil.
Waste Types and Amounts:	Debris, consisting mostly of burnt wood, nails, metal pipes, rebar, and glass, is scattered over the area. In some spots, the site also contains what looks like asbestos, friable and nonfriable.
Site Dimensions:	Area = 10,000 ft^2 250 ft (l) x 40 ft (w)

OPERABLE UNIT 100-DR-1

Site Name: 1607-D1

Aliases: 1607-D2 Septic Tank and Associated Drain Field
124-D-2
1607-D2 Sanitary Sewer System
1607-D2 Septic Tank

Site Description: This septic tank has been in use since 1944. The unit includes a tile field. It is 13.5 ft deep, constructed of reinforced concrete, and has a 553-person capacity (35 gal per capita) with an average detention period of 24 h. The walls and floor are 10 in. thick. The tile field is constructed of 4 in. vitrified pipe, concrete pipe, or drain tile with a minimum of 8 linear feet per capita. The laterals are jointed and spaced 8 ft apart.

Waste Types and Amounts: This unit receives sanitary waste from office, maintenance services, and process water pumping buildings (190-DA, 189-D, 185-D, 182-D, 183-D, 170-D, and 105-D). The flow rate to this unit is estimated at 1,225 gal/d.

Site Dimensions: 26.5 ft (l) x 12 ft (w)

Site Name: 1607-D4

Aliases: 1607-D4 Septic Tank and Associated Drain Field
124-D-4
1607-D4 Sanitary Sewer System
1607-D4 Septic Tank

Site Description: This septic tank was used from 1944 to 1968. The unit includes a tile field. It is 8 ft 4 in. deep, constructed of reinforced concrete, and has a 6-person capacity (35 gal per capita) with an average detention period of 24 h. The walls and floor are 8 and 6 in. thick, respectively. The tile field is constructed of 4 in. vitrified pipe, concrete pipe, or drain tile with a minimum of 8 linear feet per capita. The laterals are jointed and spaced 8 ft apart.

Waste Types and Amounts: The unit received sanitary waste from the 115-D Gas Recirculation Building, amount unknown.

Site Dimensions: 4 ft (l) x 2 ft (w)

OPERABLE UNIT 100-DR-1

Site Name:	1607-D5
Aliases:	1607-D5 Septic Tank and Associated Drain Field 124-D-5 1607-D5 Sanitary Sewer System 1607-D5 Septic Tank
Site Description:	This septic tank has been in use since 1944. The unit includes a tile field. It is 7 ft 10 in. deep, constructed of reinforced concrete, and has a 6-person capacity (35 gal per capita) with an average detention period of 24 h. The walls and floor are 8 and 6 in. thick, respectively. The tile field is constructed of 4 in. vitrified pipe, concrete pipe, or drain tile with a minimum of 8 linear feet per capita. The laterals are jointed and spaced 8 ft apart.
Waste Types and Amounts:	This unit receives sanitary waste from the 181-D Pumphouse. The flow rate to this unit is estimated at 35 gal/d.
Site Dimensions:	4 ft (l) x 2 ft (w)

OPERABLE UNIT 100-DR-2

Site Name: 116-D-8
Aliases: 100-D Cask Storage Pad
Site Description: This storage pad was used from 1946 to 1975. The unit is a concrete pad with a drain. The drain, which facilitated pad decontamination and rain runoff, discharged into the 105-DR process sewer.
Waste Types and Amounts: This site contains trace amounts of radionuclides and decontamination chemicals.
Site Dimensions:

Site Name: 116-DR-3
Aliases: 105-DR Storage Basin Trench
Site Description: This trench was used in 1955.
Waste Types and Amounts: The site received contaminated sludge and water removed from 105-DR Fuel Storage Basin.
Site Dimensions: Area = 2,400 ft^2
60 ft (l) x 40 ft (w) x 10 ft (d)

Site Name: 116-DR-4
Aliases: 105-DR Pluto Crib
Site Description: This crib was used from 1952 to 1953. During sampling for the UNI-946 document (1975 to 1976), the site appeared to have no gravel.
Waste Types and Amounts: The site received liquid wastes from isolated tubes containing ruptured fuel elements in the 105-DR Fuel Storage Basin.
Site Dimensions: 10 ft (l) x 10 ft (w) x 15 ft (d)

Site Name: 116-DR-6
Aliases: 1608-DR Liquid Disposal Trench
Site Description: This trench was used from 1953 to 1965.
Waste Types and Amounts: The site received diverted coolant during the Ball 3X upgrade. It also received diverted water during a reactor shutdown, when maintenance was necessary on the effluent system.
Site Dimensions: Area = 500 ft^2
50 ft (l) x 10 ft (w) x 10 ft (d)

Site Name: 116-DR-7
Aliases: 105-DR Inkwell Crib
Site Description: This crib was in use during 1953. Currently, the site is identifiable by a concrete marker.
Waste Types and Amounts: Liquid Potassium borate solution was drained from the 3X system prior to the Ball 3X System upgrade.
Site Dimensions: 5 ft (l) x 5 ft (w) x 10 ft (d)

OPERABLE UNIT 100-DR-2

Site Name:	116-DR-8
Aliases:	117-DR Crib
Site Description:	This French drain was used from 1960 to 1964. the structure is filed wit gravel and covered to grade with clean soil. A large steel vent identifies the site.
Waste Types and Amounts:	The site received drainage from the containment system 117 building seal pits.
Site Dimensions:	10 ft (l) x 10 ft (w) x 10 ft (d)

Site Name:	118-D-5
Aliases:	Ball 3X Burial Ground
Site Description:	This burial ground was used in 1954. The unit consists of two burial trenches located parallel to each other with one trench each side of the above-ground experimental Level 1 discharge pipe. Each trench is 40 ft long by 20 ft wide.
Waste Types and Amounts:	The site contains the thimbles removed from the 105-DR Reactor during the Ball 3X work in 1954.
Site Dimensions:	Area = 1,600 ft^2 10 ft deep

Site Name:	118-DR-2
Aliases:	105-DR Reactor Building 105-DR
Site Description:	This reactor was in use from October 3, 1950 to December 30, 1964. The unit consists of: 1) a reactor block, which includes the graphite moderator stack, biological and thermal shields, pressure tubes, and the safety and control systems; 2) the irradiated fuel storage basin; and 3) contaminated portions of the reactor building.
Waste Types and Amounts:	This unit contains an estimated 13,500 Ci of radionuclides, 94 tons of lead, 100 ft^3 of asbestos and 500 lb of cadmium.
Site Dimensions:	Not listed in WIDS

Site Name:	122-DR-1
Aliases:	105-DR Sodium Fire Facility 105-DR Large Sodium Fire Facility
Site Description:	This test treatment or support facility was in use from 1972 to 1986. The unit consists of a waste thermal treatment unit and hazardous waste staging area.
Waste Types and Amounts:	Wastes consists of sodium, lithium, and sodium-potassium alloy. Approximately 20,000 kg are managed at this facility each year. The facility is also used to store up to 20,000 L of dangerous wastes.
Site Dimensions:	Not listed in WIDS

OPERABLE UNIT 100-DR-2

Site Name:	126-DR-1
Aliases:	190-CR Clearwell Tank Pit
Site Description:	This demolition and inert Landfill has been in operation since the 1970's. The unit is an excavated area between the 183-DR and 190-DR that contained four 3,750,000 gal steel water tanks. The four tanks were removed. approximately 25% of the bottom surface area contains a layer of waste ~5 to 10 ft deep that is covered wit pit run backfill and located in the northwest sector of the pit. The southern sector is posted as an asbestos area.
Waste Types and Amounts:	The unit contains demolition and inert waste from demolished facilities, including rubble from released portions of the 115-D/DR, and some rubble from 183-DR. In 1989, small amounts of friable asbestos were found scattered throughout the southern sector. The asbestos is believed to be the result of salvage operations during the 1970's. The site may contain chromates in both the soil and underground piping as a result of its association with water treatment. Because of this potential, it is closed to waste disposal.
Site Dimensions:	42 ft (l) x 525 ft (w)

Site Name:	132-DR-1
Aliases:	1608-DR Waste Water Pumping Station 1608-DR Effluent Pumping Station
Site Description:	This pump station operated from 1950 to 1964. The nit consisted of: 1) an above-ground structure consisting of concrete block walls, a reinforced concrete floor, and a reinforced concrete deck with a composition surface; and 2) a below grade structure of reinforced concrete. The facility contained an operating level, which consisted of pumping equipment, and an accumulation inlet chamber, which fed three discharge sump chambers. The accumulation chamber was located in the northern section of the facility.
Waste Types and Amounts:	This site received water from reactor building drains containing trace amounts of low-level radionuclides and decontamination chemicals. Radionuclides were primarily miscellaneous fission and activation products. The decontamination chemicals consisted of sodium fluoride, oxalic acid, and citric acid. Water was pumped from the reactor collection pit into the reactor effluent lines near the reactor building and became part of the 107-DR effluent that was discharged to the Columbia River.
Site Dimensions:	Area = 1,224 ft^2 36 ft (l) x 34 ft (w)

OPERABLE UNIT 100-DR-2

Site Name:	132-DR-2
Aliases:	116-DR Reactor Exhaust Stack
Site Description:	This stack was in use from 1950 to 1986. The unit is a monolithic, reinforced concrete structure with a maximum wall thickness of 1.5 ft at the base. It rests on a double octagon-shaped base that extends 17.5 ft below grade. An opening at the base provides access to its interior portion. This opening is fitted with a steel door.
Waste Types and Amounts:	Until 1964 the unit discharged exhaust air from the 105-DR Building. Since 1972, the unit was used to support operations relating to the 105-DR Sodium Burn Facility (122-DR-1). The interior of the unit contains an unknown quantity of low-level radioactive materials.
Site Dimensions:	200 ft long and 16.58 ft in diameter

Site Name:	1607-D3
Aliases:	1607-D3 Septic Tank and Associated Drain Field 1607-D3 Sanitary Sewer System 1607-D3 Septic Tank
Site Description:	This septic tank has been in use since 1944. The nit includes a tile field. It is 9 ft 10 in. deep, constructed of reinforced concrete, and has a 10 person capacity (35 gal per capita) with an average detention period of 24 h. The walls are 8 in. thick, and the floor is 6 in. thick. The tile field is constructed of 4 in. vitrified pipe, concrete pipe, or drain tile with a minimum of 8 linear feet per capita. The laterals are open jointed and spaced 8 ft apart.
Waste Types and Amounts:	The unit receives sanitary waste from the 151-D Electrical Distribution Substation. The flow rate to this unit is estimated at 1,050 gal/d.
Site Dimensions:	6 ft 91) x 3 ft (w)

OPERABLE UNIT 100-DR-3

Site Name:	116-DR-10
Aliases:	105-DR Fuel Storage Basin Cleanout Percolation 105-DR Fuel Storage Discharge Pond 105-DR Pond
Site Description:	This pit was active from October 1984 to November 1984. The unit is an open excavation pit located in a natural depression. The excavation has been backfilled and graded to match the natural terrain. The original natural depression remains.
Waste Types and Amounts:	The unit received processed water from the 105-DR Fuel Storage Basin. During the cleanout of this basin, the radiologically contaminated shielding water was processed through a process system using ion exchange columns. Before discharging the water the water to the unit, composite samples were taken to insure that the radionuclide concentrations were below release criteria in Table II of DOE Order 5480.1 Although the water was cleaned to applicable release limits, minute quantities (below release limits) of radionuclides remaining in the water accumulated in the soil at the same low points of the floor. No know hazardous substances were present in the water; however, chemical analysis was not a standard practice during that period, and there is no evidence that one was performed. It should be noted that water removed from the 1608-DR is believed to be comparable to the storage basin water, and EP-TOX testing results for the 1608-DR water were negative.
Site Dimensions:	Area = 4,000 ft^2 80 ft (l) x 50 ft (w) x 6 ft (d)

Site Name:	1607-D1
Aliases:	1607-D1 Septic Tank and Associated Drain Field 124-DR-1 1607-D1 Sanitary Sewer System 1607-D1 Septic Tank
Site Description:	This septic tank was active from 1944 to 1965. The unit includes a tile field. It is 11 ft deep, constructed of reinforced concrete, and has a 125-person capacity (35 gal per capita) with an average detention period of 24 h. The walls and floor are 10 in thick. The tile field is constructed of 4 in. vitrified pipe, concrete pipe, or drain tile with a minimum of 8 linear ft per capita. The laterals are open jointed and spaced 8 ft apart.
Waste Types and Amounts:	The unit received sanitary waste from the 1701-D Badgehouse (security checkpoint) and the 1709-D Patrol Change Room and offices, amount unknown.
Site Dimensions:	14 ft (l) x 7 ft (w)

OPERABLE UNIT 100-DR-3

Site Name: 600-30
Aliases: 100-DR Construction Lay-down Area
Site Description: This dumping area is inactive. This unit is approximately 10 acres. In an aerial photo, though not conclusive, the unit appears to have been a laydown yard during DR construction.
Waste Types and Amounts: Waste consists of broken sheet asbestos, buckets of tar, steel, galvanized pipe, rebar, angle iron, deteriorated keg of nails, burned and crushed 50 gal drums, steel plate, chain, wire rope metal hinges, shovels, gas and oil cans, welding rod cans, evidence of concrete blocks, metal tubing, and shipping boxes. The boxes have been broken.
Site Dimensions: Area = 420,000 ft^2
700 ft (l) x 600 ft (w)

Site Name: 128-D-1
Aliases: 100 D/DR Burning Pit
Site Description: This burning pit was active from 1944 to 1967.
Waste Types and Amounts: The site was used for the disposal of nonradioactive, combustible materials, such as paint waste, office waste, and chemical solvents.
Site Dimensions: 100 ft (l) x 100 ft (w) x 10 ft (d)

Site Name: 118-D-1
Aliases: 100-D Burial Ground No. 1
Site Description: This burial ground was active from 1944 to 1967.. This unit contains many trenches running north and south. Typically, the trenches are 300 ft long by 20 ft wide and 20 ft deep with a 20-ft space between them.
Waste Types and Amounts: The unit was used for the disposal of irradiated dummies, thimbles, rods, gun barrels, and other contaminated solid waste.
Site Dimensions: 450 ft (l) x 375 ft (w) x 20 ft (d)

Site Name: 118-D-2
Aliases: 100-D Burial Ground No. 2
Site Description: This burial ground was active from 1949 to 1970. The unit contained many trenches running east-west and 5 disposal pits. The trenches are 66 ft wide at the surface, 20 ft wide At the bottom, and 20 ft deep. Each pit site is composed of two small pits together, constructed with railroad ties, with interior dimensions of ~6 ft by 6 ft, placed within an excavation 24 ft wide by 24 ft deep. All were covered with 6 ft of soil.
Waste Types and Amounts: The unit was used for miscellaneous contaminated solid waste, irradiated dummies, splines, rods, thimbles, and gun barrels. After April 1966, 100-N Area solid wastes were also buried here.
Site Dimensions: 1,000 ft (l) x 360 ft (w) x 20 ft (d)

OPERABLE UNIT 100-DR-3

Site Name:	118-D-3
Aliases:	100-D Burial Ground No. 3
Site Description:	This burial ground was active from 1956 to 1973. The unit contains a trench running north and south. Typically, trenches were 200 ft long by 20 ft wide and 20 ft deep. The spacing between trenches was not uniform.
Waste Types and Amounts:	The unit contains miscellaneous contaminated solid wastes and irradiated dummies, splines, rods, thimbles, and gun barrels. It was also used for the disposal of 100-N solid wastes.
Site Dimensions:	1,000 ft (l) x 250 ft (w) x 20 ft (d)

Site Name:	118-D-4
Aliases:	Construction Burial Ground
Site Description:	This burial ground was active from 1953 to 1967. The unit contains many trenches. The 105-D Ball 3X Burial Ground is part of this site and is located in the northeast corner. Three square concrete markers mark the location.
Waste Types and Amounts:	The unit contains contaminated material generated during various reactor modifications from the 105-D Reactor building. The contaminated material consisted mainly of reactor components and hardware.
Site Dimensions:	600 ft (l) x 200 ft (w) x 20 ft (d)

Site Name:	118-DR-1
Aliases:	105-DR Gas Loop Burial Ground
Site Description:	This burial ground was active from 1963 to 1964. The unit contains a trench running north and south.
Waste Types and Amounts:	This unit contains irradiated metal assemblies from the 105-DR Gas Loop.
Site Dimensions:	125 ft (l) x 75 ft (w) x 15 ft (d)

OPERABLE UNIT 100-FR-1

Site Name:	116-F-1
Aliases:	Lewis Canal
Site Description:	The trench operated from 1953 to 1965.
Waste Types and Amounts:	The site received liquid wastes from 105-F and 190-F buildings and decontamination wastes from 189-F Building. Occasionally, contaminated coolant from the reactor front and rear faces was also drained to the unit.
Site Dimensions:	3,000 ft (l) x 40 ft (w) x 10 ft (d)

Site Name:	116-F-2
Aliases:	107-F Liquid Waste Disposal Trench
Site Description:	The trench operated from 1950 to 1965.
Waste Types and Amounts:	The site received coolant effluent from 107-F Retention Basin during reactor outages due to fuel ruptures. During deactivation of the 105-F Reactor, the unit received overflow water from the 105-F Storage Basin via the retention basin.
Site Dimensions:	300 ft (l) x 50 ft (w) x 15 ft (d)

Site Name:	116-F-3
Aliases:	105-F Storage Basin Trench
Site Description:	The trench operated from 1947 to 1951. The unit is an open excavation ranging from 10 to 20 ft wide and from 1 to 11 ft deep, according to various references. No drawings show exact dimensions.
Waste Types and Amounts:	The site received reactor effluent (105-F) during an early fuel failure outage. In 1951, the site received sludge from 105-F Storage Basin.
Site Dimensions:	100 ft (l)

Site Name:	116-F-4
Aliases:	105-F Pluto Crib
Site Description:	The crib operated from 1950 to 1952 or 1956. The unit is wooden and filled with gravel. A yellow steel post and capped pipe mark the site.
Waste Types and Amounts:	The site received coolant water from pressure tubes containing ruptured fuel elements.
Site Dimensions:	10 ft (l) x 10 ft (w) x 10 ft (d)

Site Name:	116-F-5
Aliases:	Ball Washer Crib
Site Description:	The crib operated from 1962 to 1964. The site is marked with an old wooden railing fence and radiation zone signs.
Waste Types and Amounts:	The site received liquid waste from decontamination of boron steel balls.
Site Dimensions:	10 ft (l) x 10 ft (w) x 10 ft (d)

OPERABLE UNIT 100-FR-1

Site Name:	116-F-6
Aliases:	1608-F Liquid Waste Disposal Trench; 105-F Cooling Water Trench
Site Description:	The trench operated from 1952 to 1965.
Waste Types and Amounts:	The site received diverted water during reactor shutdown, where maintenance was necessary on the effluent system. This practice was used during several reactor upgrades. During the Ball 3X Project (1953), effluent was diverted to 116-F-1.
Site Dimensions:	300 ft (l) x 100 ft (w) x 10 ft (d)

Site Name:	116-F-7
Aliases:	117-F Crib
Site Description:	The French drain (Registered Class VI Underground Injection Well) operated from 1960 to 1965. The unit is filled with gravel and covered with clean soil. The facility is marked by a vent pipe.
Waste Types and Amounts:	The site received drainage from confinement exhaust systems filter seal pits in the 117 Building.
Site Dimensions:	10 ft (d) x 4 ft (w)

Site Name:	116-F-8
Aliases:	1904-F Outfall Structure
Site Description:	The outfall structure operated from 1945 to 1965. This unit was designed to provide an escape for the effluent flow from the 107 Retention Basin to the river should the line, which normally carried the effluent to the center of the river, become plugged. If the main line did plug, the effluent would overflow into a spillway that led to the edge of the Columbia River. The unit consists of a reinforced, compartmentalized, concrete water box with walls 1 ft above grade and 25 ft below grade. Spillways are constructed of reinforced concrete. Quantities of broken concrete are visible on the river bank in this location.
Waste Types and Amounts:	Reactor water from the 107 Basin was piped into the outfall structure that discharges into the Columbia River.
Site Dimensions:	27 ft (l) x 14 ft (w)

Site Name:	116-F-9
Aliases:	Animal Waste Leaching Trench
Site Description:	The trench operated from 1963 to 1976. Two trenches are connected together, forming a Y shape. The long section is 400 ft, and the shorter branch is 100 ft long. Both trenches are 15 ft wide (all surface dimensions).
Waste Types and Amounts:	The site received wash wastewater from animal pens.
Site Dimensions:	10 ft (d)

OPERABLE UNIT 100-FR-1

Site Name: 116-F-10
Aliases: 105-F Dummy Decontamination French Drain; 116-F-8, 105 Dummy/Perf Decontamination Crib, Perf Decontamination Drain
Site Description: The French drain operated from 1948 to 1965. A vitreous tile extends a few feet out of the ground. There is about 10 ft of sand and gravel beneath the tile.
Waste Types and Amounts: The site received radioactive water rinses and spent acids from the decontamination of fuel element spacers and other reactor hardware, primarily pressure tube caps.
Site Dimensions: 20 ft (d) x 3 ft (w)

Site Name: 116-F-11
Aliases: 105-F Cushion Corridor French Drain
Site Description: The French drain operated from 1953 to 1965.
Waste Types and Amounts: The site received cushion corridor decontaminated waste.
Site Dimensions: 3 ft (d) x 3 ft (w)

Site Name: 116-F-12
Aliases: 148-F French Drain
Site Description: The French drain operated from 1944 to 1964.
Waste Types and Amounts: The site received recovered effluent pump prime from the lift station that discharged back to the effluent line.
Site Dimensions: 6 ft (d) x 3 ft (w)

Site Name: 116-F-13
Aliases: 1705-F Experimental Garden French Drain
Site Description: The French drain operated from 1952 to 1976.
Waste Types and Amounts: The site received effluent water from a botany experiment.
Site Dimensions: 3 ft (d) x 3 ft (w)

Site Name: 116-F-14
Aliases: 107-F Retention Basin; 107-F
Site Description: The retention basin operated from 1945 to 1965. The unit is concrete-lined with 20-ft walls, similar in design to the 107-B and 107-D retention basins. The unit has been backfilled to a depth of ~5 ft, with soil piled to cover the walls.
Waste Types and Amounts: The site received cooling water effluent from the 105-F Reactor for radioactive decay and thermal cooling prior to release to the Columbia River. Seventy percent of the total radionuclide inventory is contained within the soil and adjacent to the basin. Approximately 10 Ci have leached into the concrete floor and walls.
Site Dimensions: 450 ft (l) x 230 ft (w) x 24 ft (d)

OPERABLE UNIT 100-FR-1

Site Name: 116-F-15
Aliases: 108-F Radiation Crib
Site Description: The size and design of the unit is unknown. The floor opening is covered with plywood to restrict access. A 20-ft by 18-in trench is present and appears to slope down into the unit. The trench is covered with plywood and posted as radioactive.
Waste Types and Amounts: The unit has not been sampled for radiological or chemical contaminations. It is know that alpha contamination experiments were conducted in the 108-F Building.
Site Dimensions: Not listed in WIDS

Site Name: 116-F-16
Aliases: PNL Outfall
Site Description: A pipe discharged into a concrete spillway, which extends into the river. The spillway is an 8- to 10-ft-wide concrete structure that extends ~20 ft out from the shoreline and ~12 ft into the Columbia River. The sides are 18 in high and extend down the length of the structure.
Waste Types and Amounts: The unit received animal sewage, 107-F Retention Basin water, and low-level contamination from the farm projects. The 107-F Retention Basin water was used in animal experiments at the farm project.
Site Dimensions: Not listed in WIDS

Site Name: 118-F-8
Aliases: 105-F Reactor Building
Site Description: The reactor operated from 1944 to 1964. The unit consists of: 1) A reactor block, which includes the graphite moderator stack, biological and thermal shields, pressure tubes and the safety control systems; 2) the irradiated fuel storage basin; and 3) contaminated portions of the reactor building.
Waste Types and Amounts: The unit contains an estimated 16,000 Ci of radionuclides, 94 tons of lead, less than 100 ft^3 of asbestos, and 30 lb of cadmium.
Site Dimensions: Not listed in WIDS

OPERABLE UNIT 100-FR-1

Site Name: 126-F-2
Aliases: 183-F Clearwells
Site Description: This demolition and inert landfill has been active since the 1970's. The unit consists of covered, reinforced concrete basins, having a capacity of about 10M gal, separated in the center by a pump room. The pump room was reinforced concrete and largely below grade. The above-ground portion of the pump room has been demolished, and the below-ground portion has been filled with pump room rubble and backfill. Approximately 25% of the east clearwell basin contains waste. The west clearwell remains intact.
Waste Types and Amounts: The unit now contains nonhazardous and nonradioactive demolition and inert waste from demolished facilities. This waste includes rubble from the released portion of 115-F as well as rubble from such noncontaminated facilities as 183-F, 190-F, 189-F, 185-F, and 171-F.
Site Dimensions: 101,385 ft^2 (area), 751 ft (l) x 135 ft (w)

Site Name: 128-F-2
Aliases: 100-F Burning Pit
Site Description: This burning pit is inactive. The ground still shows signs of burning. Broken glass, cans, and ashes mark areas of the site. Smaller areas of surface burning are located close to the original burn pit.
Waste Types and Amounts: Nonradioactive, combustible materials, (vegetation, office waste, paint waste, and chemical solvents) have been burned at the site. There are also some large metal materials present, such as hardware, machinery, and other noncontaminated miscellaneous equipment.
Site Dimensions: 9,000 ft^2 (area), 150 ft (l) x 60 ft (w)

Site Name: 132-F-3
Aliases: 115-F Recirculating Facility
Site Description: This building operated from 1943 to 1956. This unit was a single story, reinforced concrete structure, 20 ft high. An operating gallery extended down the center and was flanked on either side by cells that contained the gas processing equipment. The equipment cell walls and floors were 3-ft thick. At right angles to the operating gallery and extending across the full width of the west end was the service station, which contained the ventilation fan, air compressor, office, locker room, etc. A pipe tunnel 36 ft wide by 8 ft high ran beneath the full length of the building. The main gas lines to and from the 105-F Building entered through this tunnel. At present, the site looks like a gravel parking lot that is free of any debris.
Waste Types and Amounts: The resident radionuclides are H-3, C-14, Co-60, Sr-90, and Cs-137.
Site Dimensions: 168 ft (l) x 98 ft (w) x 11 ft (d)

OPERABLE UNIT 100-FR-1

Site Name:	132-F-4
Aliases:	116-F Reactor Stack; 116-F Reactor Exhaust Stack
Site Description:	This stack operated from 1944 to 1965. This was used to dispose of confinement air that originated from the work areas in the 105 Reactor Building. The unit has reinforced concrete construction with a base diameter of ~16 ft.
Waste Types and Amounts:	The interior of the unit contained 4.2 mCi of radioactive materials.
Site Dimensions:	220 ft^2 (area), 200 ft (l) x 16.58 ft (w)

Site Name:	132-F-5
Aliases:	117-F Filter Building
Site Description:	This building is inactive. The unit and duct work were all made of reinforced concrete, 1 to 2-ft thick. The building was 35 ft high with 8 ft above ground.
Waste Types and Amounts:	The radionuclides found in the 117-F Building are H-3, C-14, Co-60, Cs-137, Sr-90, Eu-154, and Eu-152.
Site Dimensions:	59 ft (l) x 39 ft (w)

Site Name:	132-F-6
Aliases:	1608-F Waste Water Pumping Station; 1608-F Effluent Pumping Station
Site Description:	The pump station operated from 1944 to 1965. The unit was constructed of reinforced concrete, 12 ft above grade and 32 ft below grade. The unit included a wastewater collection pit.
Waste Types and Amounts:	This site received water from reactor building drains containing trace amounts of low-level radionuclides and decontamination chemicals (primarily Turco). Radionuclides were primarily miscellaneous activation products. The decontamination chemicals consisted of sodium fluoride, oxalic acid, and citric acid. Water was pumped from the reactor collection pits into the reactor effluent lines near the reactor building and became part of the 107-F effluent that was discharged into the Columbia River.
Site Dimensions:	36 ft (l) x 34 ft (w)

OPERABLE UNIT 100-FR-1

Site Name:	1607-F2
Aliases:	1607-F2 Septic Tank; 124-F-2, 1607-F2 Sanitary Sewer System
Site Description:	The septic tank operated from 1944 to 1988. The unit is 13 ft 6 in. deep, constructed of reinforced concrete, and has a 522-person capacity (35 gal per capita) with an average detention period of 24 h. The walls and floor are 10 in. thick. The tile field is constructed of 4-in. vitrified pipe, concrete pipe, or drain tile with a minimum of 8 linear feet per capita. The laterals are open jointed and spaced 8 ft apart.
Waste Types and Amounts:	The unit received unknown amounts of sanitary sewage from the 184-F Powerhouse, 185-F Chemical Treatment, 190-F Pumphouse, 105-F Reactor Building, 108-F Building, and the 1700 administration and service buildings. The unit now services the 105-F and 108-F buildings only. The other buildings have been demolished.
Site Dimensions:	26.5 ft (l) x 11.5 ft (w)

Site Name:	1607-F3
Aliases:	1607-F3 Septic Tank; 124-F-3, 1607-F3 Sanitary Sewer System
Site Description:	This septic tank operated from 1944 to 1965. The unit includes a tile field. It is 11 ft deep, constructed of reinforced concrete, and has a 41-person capacity (35 gal per capita) with an average detention period of 24 h. The walls and floor are 10 in. thick. The tile field is constructed of 4-in. vitrified pipe, concrete pipe, or drain tile with a minimum of 8 linear feet per capita. The laterals are open jointed and spaced 8 ft apart.
Waste Types and Amounts:	This unit received sanitary sewage from the 182-F Pump Station, 183-F Water Treatment Plant, and 151-F Substation, amounts unknown.
Site Dimensions:	8.5 ft (l) x 4.5 ft (w)

Site Name:	1607-F4
Aliases:	1607-F4 Septic Tank; 124-F-4, 1607-F4 Sanitary Sewer System
Site Description:	This septic tank operated from 1944 to 1965. The unit includes a tile field. It is 8 ft 4 in. deep, constructed of reinforced concrete, and has a 6-person capacity (35 gal per capita) with an average detention period of 24 h. The walls are 8 in. thick, and the floor is 6 in. thick. The tile field is constructed of 4-in. vitrified pipe, concrete pipe, or drain tile with a minimum of 8 linear feet per capita. The laterals are open jointed and spaced 8 ft apart.
Waste Types and Amounts:	This unit received sanitary sewage from 115-F Gas Recirculation Building amount unknown.
Site Dimensions:	4 ft (l) x 2 ft (w)

OPERABLE UNIT 100-FR-1

Site Name:	1607-F5
Aliases:	1607-F5 Septic Tank; 124-f-5, 1607-F5 Sanitary Sewer System
Site Description:	This septic tank operated from 1944 to 1965. The unit includes a tile field. It is 8 ft 4 in. deep, constructed of reinforced concrete, and has a 6-person capacity (35 gal per capita) with an average detention period of 24 h. The walls are 8 in. thick, and the floor is 6 in. thick. The tile field is constructed of 4-in. vitrified pipe, concrete pipe, or drain tile with a minimum of 8 linear feet per capita. The laterals are open jointed and spaced 8 ft apart.
Waste Types and Amounts:	This unit received sanitary sewage from 181-F Pumphouse, amount unknown.
Site Dimensions:	4 ft (l) x 2 ft (w)

Site Name:	1607-F6
Aliases:	1607-F6 Septic Tank; 124-F-6, 1607-F6 Sanitary Sewer System
Site Description:	This septic tank operated from 1945 to 1975. The unit includes a tile field.
Waste Types and Amounts:	This unit received sanitary sewage from 141-B, -C, -F, and -M buildings and 146-FR Animal Farm buildings, amounts unknown.
Site Dimensions:	No dimensions.

OPERABLE UNIT 100-FR-2

Site Name: 118-F-1
Aliases: Minor Construction Burial Ground No. 2; Burial Ground No. 1; Solid Waste Burial Ground No. 2
Site Description: This burial ground operated from 1954 to 1965. The site contains trenches that run north-south and are typically 300 ft long by 20 ft wide.
Waste Types and Amounts: This site contains miscellaneous radioactive solid wastes and reactor components and hardware.
Site Dimensions: 600 ft (l) x 500 ft (w) x 20 ft (d)

Site Name: 118-F-2
Aliases: Burial Ground No. 2; Solid Waste Burial Ground No. 1
Site Description: This burial ground operated from 1945 to 1965. The individual trenches run north to south and are typically 250 ft by 20 ft.
Waste Types and Amounts: The site contains miscellaneous radioactive solid wastes, reactor components and hardware.
Site Dimensions: 368 ft (l) x 326 (w) x 20 ft (d)

Site Name: 118-F-3
Aliases: Minor Construction Burial Ground No. 1; Burial Ground No. 3
Site Description: The burial ground operated in 1952. The site runs north to south.
Waste Types and Amounts: The site contains irradiated wastes, such as thimbles and step plugs, that were removed from the 105-F pile during the Ball 3X work in 1952.
Site Dimensions: 175 ft (l) x 50 ft (w) x 15 ft (d)

Site Name: 118-F-4
Aliases: 115-F Pit; 115-F Crib
Site Description: The burial ground operated in 1949. The unit is a small pit covered with 6 ft of soil. A yellow steel post marks the site.
Waste Types and Amounts: The site contains silica gel removed from gel tower in one of the 115-F dryer rooms.
Site Dimensions: 10 ft (l) x 10 ft (w) x 10 ft (d)

Site Name: 118-F-5
Aliases: PNL Sawdust Repository
Site Description: The burial ground operated from 1954 to 1975. The site is a large raised mound with trenches running north and south.
Waste Types and Amounts: The site contains low-level activity sawdust from animal pens.
Site Dimensions: 500 ft (l) x 150 ft (w) x 15 ft (d)

OPERABLE UNIT 100-FR-2

Site Name: 118-F-6
Aliases: PNL Solid Waste Burial Ground
Site Description: The burial ground operated in 1965. The unit runs north and south. It adjoins the 118-F-1 Burial Ground and is designated by HPS-AC-5-40 concrete markers.
Waste Types and Amounts: This unit contains animal and laboratory wastes. This is considered a biology burial ground not receiving reactor-related wastes.
Site Dimensions: 400 ft (l) x 200 ft (w) x 20 ft (d)

Site Name: 118-F-7
Aliases: 100-F Miscellaneous Hardware Storage Vault
Site Description: This burial ground operated from 1945 to 1965. The unit consists of a concrete box with a wooden cover.
Waste Types and Amounts: The site served as temporary storage for miscellaneous reactor hardware. The hardware is still present.
Site Dimensions: 16 ft (l) x 8 ft (w) x 8 ft (d)

Site Name: 118-F-9
Aliases: PNL Rad Site
Site Description: The site contains only one trench. The site appears to have been backfilled, and native vegetation has become re-established. The site is posted as a surface-contaminated area, and a chain barricade with radiation signs surrounds the site.
Waste Types and Amounts: No information.
Site Dimensions: 4,500 ft^2 (area) x 150 ft (l) x 30 ft (w)

Site Name: 120-F-1
Aliases: Glass Dump
Site Description: The site was cut into the ground with the front blade of a bulldozer, pushing all the dirt to the west end of the unit. The original access road is overgrown with 3-ft-high sagebrush, indicating this site has not been used for many years.
Waste Types and Amounts: The site is covered with ~2 ft of fluorescent tubes; incandescent light bulbs; instrument vacuum tubes; and small AAA, C, and D batteries. The site also contains an assortment of chemical bottles, both large and small.
Site Dimensions: 30 ft (l) x 8 ft (w) x 4 ft (d)

OPERABLE UNIT 100-FR-2

Site Name: 126-F-1
Aliases: 184-F Powerhouse Ash Pit; 188-F Ash Disposal Area
Site Description: This ash pit operated from 1944 to 1965. The original site is a low lying area between the above-ground effluent lines leading to 116-F-14. This area is radioactively contaminated because of large-volume leakage from the effluent systems in this area. The entire area is a radiation control area and is within the HPS-AC-5-40 permanent markers. Probably in the late 1940's, the effluent leakage area was contained by an earthen dike, and the ash sluice pipe was extended through the dike into the new ash pit area. The new area is also a radiation control area, but the contamination levels are very low. The new area is not within the HPS-AC-5-40 permanent markers.
Waste Types and Amounts: Unknown amounts of coal ash from the 184-F Powerhouse were sluiced to this unit with raw river water. The ash has been analyzed using the EP Toxicity Test in accordance with WAC 173-303, and no hazardous materials were found. This site also received low-level radionuclides from effluent system leakage.
Site Dimensions: Not listed in WIDS

Site Name: 128-F-1
Aliases: 100-F Burning Pit'; 100-F Burning Pit No. 1
Site Description: This burning pit operated from 1945 to 1965.
Waste Types and Amounts: The site was used for the disposal of nonradioactive combustible materials, such as paint waste, office waste, and chemical solvents.
Site Dimensions: 100 ft (l) x 100 ft (w) x 10 ft (d)

Site Name: 128-F-3
Aliases: PNL Burning Pit
Site Description: The site is characterized by annual weeds. The surface has a thin layer of coal and coal ash mixed with fine sandy soil. Scraping the surface a few inches reveals black ash or coal dust. Nothing on the soil surface distinguishes this site from other sites of coal ash dumping found along the dirt road just south of the ash disposal pit.
Waste Types and Amounts: It is not known what was burned at the site. It was, however, verified that the site was used for burning by PNL and WHC employees. In 1988, the DOE Headquarter Environmental survey conducted sampling at this site. A backhoe was used for investigation. A hole was dug 6 to 8 ft deep, but because of the coal ash used for fill, the sides of the ditch caved in. Nothing but coal ash was found at the site.
Site Dimensions: 100 ft (l) x 100 ft (w)

OPERABLE UNIT 100-FR-2

Site Name:	600-31
Aliases:	100-F Area Bottle Disposal Site
Site Description:	The unit is a sandy area with rabbit brush growing throughout and exhibiting physical evidence that the dumping of laboratory materials took place. The area appears to have been disturbed by equipment, such as a blade or dozer.
Waste Types and Amounts:	Wastes identified are laboratory-type bottles and bottle caps with the following markings on some of the caps: 1) Sulfuric, 2) Mallinckrodt, 3) Bakers, 4) B & A, 5) Fisher. The markings and colors on the bottles and caps indicate they most likely contained laboratory chemicals, (e.g., nitric acid, sulfuric acid, hydrochloric acid, etc.)
Site Dimensions:	500 ft^2 (area), 50 ft (l) x 10 ft (w)

Site Name:	1607-F1
Aliases:	1607-F1 Septic Tank and Associated Drain Field; 124-F-1; 1607-F1 Sanitary Sewer System; 1607-F1 Septic Tank
Site Description:	This septic tank operated from 1944 to 1960. The unit includes a tile field. It is 11 ft deep, constructed of reinforced concrete, and has a 125-person capacity (35 gal per capita) with an average detention period of 24 h. The walls and floor are 10 in. thick. The tile field is constructed of 4-in. vitrified pipe, concrete pipe, or drain tile with a minimum of 8 linear feet per capita. The laterals are open jointed and spaced 8 ft apart.
Waste Types and Amounts:	This unit received sanitary sewage from 1701-F Badge House (security checkpoint), 1709-F Fire Station, and 1720-F Administrative Office and change room for security patrol personnel. The flow rate to this unit is estimated at 1,225 gal/d.
Site Dimensions:	14 ft (l) x 7 ft (w)

OPERABLE UNIT 100-HR-1

Site Name:	116-H-1
Aliases:	107-H Liquid Waste Disposal Trench
Site Description:	This trench was in use from 1952 to May 1965.
Waste Types and Amounts:	The site received diversion effluent from the 107-H Retention Basin during reactor outages due to fuel element ruptures and water sludge from 107-H during deactivation of the unit.
Site Dimensions:	300 ft (l) x 25 ft (w) x 15 ft (d)

Site Name:	116-H-2
Aliases:	1608-H Liquid Waste Disposal Trench 1608-H Crib & Trench
Site Description:	This trench was in use from 1953 to 1965.
Waste Types and Amounts:	The site received coolant water from the 105-H Reactor Building during the Ball 3X system upgrade program. The site was used during other upgrade programs and, when maintenance was necessary, on the effluent system.
Site Dimensions:	275 ft (l) x 100 ft (w) x 6 ft (d)

Site Name:	116-H3
Aliases:	105-H Dummy Decontamination French Drain Perf Decontamination Drain
Site Description:	This French drain was operated from 1950 to 1965. The two units are made of vitreous tile conduit. The conduit extends a few feet above the ground.
Waste Types and Amounts:	The site received spent acid and rinse water from the 105-H Dummy Decontamination Facility (fuel element spacers and other reactor hardware, primarily reactor tube caps).
Site Dimensions:	15 ft deep and 3 ft in diameter

Site Name:	116-H-4
Aliases:	105-H Pluto Crib
Site Description:	This crib was in operation from 1950 to 1952.
Waste Types and Amounts:	The site received effluent from tubes containing ruptured fuel elements.
Site Dimensions:	4 ft (l) x 4 ft (w) x 2 ft (d)

Site Name:	116-H-5
Aliases:	116-H-5 Outfall Structure 1904-H Outfall Structure
Site Description:	This outfall structure was in use from 1949 to 1965. The unit is a compartmented concrete box that overflowed to the river via a concrete sluiceway. It was designed to provide an escape for the effluent flow from the 107 Retention Basin to the river should the line, which normally carried the effluent to the center of the river, become plugged. If the main line did plug, the effluent would overflow into a spillway that led to the edge of the Columbia River.
Waste Types and Amounts:	The site received effluent water from the 107-H Basin.
Site Dimensions:	Area = 378 ft^2 27 ft (l) x 14 ft (w)

OPERABLE UNIT 100-HR-1

Site Name: 116-H-6
Aliases: 183-H Solar Evaporation Basins
Site Description: This retention basin was in operation from July 1973 to November 8, 1985. Four concrete storage basins. Each basin consists of a deep subsidence basin and a shallow flocculation basin. The flocculation basin is 45.5 ft wide, 33 ft long, and 9.5 ft deep. This basin was separated from the subsidence basin by a redwood plank weir. The subsidence basin is 53.5 ft wide, 95 ft long, and 16.5 ft deep at the north end and 15.5 ft deep at the south end. The basins have an earthen berm around three sides and an asphalt-covered berm on the north side for tank truck unloading.
Waste Types and Amounts: The facility received routine and non routine wastes. The routine wastes consisted of spent acid etch solutions (primarily nitric, sulfuric, hydrofluoric, and chromic acids) generated by the Nuclear Fuel Fabrication process. These acidic solutions were reacted with excess sodium hydroxide before being transported to the 183-H basins. Metal constituents include copper, silicon, zirconium, nickel, aluminum, chromium, manganese, and uranium, which were in the form of precipitates. Non routine wastes consisted of unused chemicals and spent solutions from miscellaneous processes. More detailed descriptions of these wastes and quantities are contained in DOE/RL 88-04, Interim Status Closure/Post Closure Plan 183-H Solar Evaporation Basins.
Site Dimensions: Area = 26,400 ft^2

Site Name: 116-H-7
Aliases: 107-H Retention Basin
107-H
Site Description: This retention basin operated from 1949 to 1965. Concrete-lined rectangular structure. The unit has been backfilled to a depth of ~4 ft above the floor and slopes to the top of the walls.
Waste Types and Amounts: This site received cooling water effluent from the 105-H Reactor for radioactive decay and thermal cooling prior to release into the Columbia River. Seventy percent of the total radionuclide inventory is contained within the soil adjacent to the unit. Approximately 10 Ci have leached into the concrete floor and walls.
Site Dimensions: Area = 163,800 ft^2
600 ft (l) x 273 ft (w)x 20 ft (d)

OPERABLE UNIT 100-HR-1

Site Name:	116-H-9
Aliases:	117-H Crib 117-H
Site Description:	This crib was in operation from 1960 to 1965. The unit was filled with gravel and covered to grade with clean soil. A large steel vent marks the site.
Waste Types and Amounts:	The site received drainage from confinement system 117 Building seal pits.
Site Dimensions:	10 ft (l) x 10 ft (w) x 10 ft (d)

Site Name:	118-H-6
Aliases:	105-H Reactor Building
Site Description:	This reactor operated from December 10, 1949 to April 21,1965. The unit consists of: 1) A reactor block, which includes the graphite moderator stack, biological and thermal shields, pressure tubes and the safety control systems; 2) the irradiated fuel storage basin; 3) the reactor gas recirculation systems; and 4) contaminated portions of the reactor building.
Waste Types and Amounts:	This unit contains an estimated 15,000 Ci of radionuclides, 112 tons of lead, less than 100 cu ft of asbestos, and 20 lb of cadmium.
Site Dimensions:	Area = 62,000 ft^2

Site Name:	126-H-2
Aliases:	183-H Clearwells
Site Description:	This Demolition and Inert Landfill has been operating since the 1970's. The unit consists of covered reinforced concrete basins, having a capacity of ~10M gal and separated in the center by a pump room. The pump room was reinforced concrete and largely below grade. The above-ground potion of the pump room has been demolished, and the below-ground portion has been filled with pump room rubble and backfill. Approximately 50% of the east clearwell basin contains waste. The west clearwell remains intact.
Waste Types and Amounts:	The unit now contains non hazardous and non radioactive demolition and inert waste from demolished facilities. This waste includes rubble from such facilities as 190-H, 151-H, and 1701-D.
Site Dimensions:	Area = 101,385 ft^2 751 ft (l) x 135 ft (w)

OPERABLE UNIT 100-HR-1

Site Name:	132-H-1
Aliases:	116-H Reactor Exhaust Stack
Site Description:	This stack operated from 1945 to 1965. The unit was part of the 105-H Reactor Gas and Exhaust Air System. It was constructed of reinforced concrete.
Waste Types and Amounts:	Air moving form least contaminated zones through increasingly contaminated zones was discharged to the stack unfiltered.
Site Dimensions:	Area = 220 ft^2 220 ft (l) x 200 ft (w)

Site Name:	132-H-3
Aliases:	1608-H Waste Water Pumping Station 1608-H Effluent Pumping Station 116-H-8
Site Description:	This pump station operated from 1949 to 1965. The unit was constructed of concrete block walls above ground and reinforced concrete for the remainder. It was 12 ft above grade and 32 ft below grade. The unit included a wastewater collection pit.
Waste Types and Amounts:	This site received water from reactor building drains and irradiated fuel storage drains containing trace amounts of low-level radionuclides and decontaminated chemicals (primarily Turco). Radionuclides were primarily activation and fission products. Turco is a commercial chemical compound with a proprietary composition. Other decontamination chemicals consisted of sodium floride, oxalic acid, and citric acid.
Site Dimensions:	36 ft (l) x 34 ft (w)

Site Name:	1607-H2
Aliases:	1607-H2 Septic Tank and Associated Drain Field 1607-H2 Sanitary Sewer System 124-H-2 1607-H2 Septic Tank
Site Description:	This septic tank was in use from 1949 to 1965. The unit includes a tile field.
Waste Types and Amounts:	This unit received sanitary sewage from 182-H, 183-H, 190-H, and all office and maintenance service buildings with "1700" designations, amounts unknown.
Site Dimensions:	Not listed in WIDS

OPERABLE UNIT 100-HR-1

Site Name:	1607-H4
Aliases:	1607-H4 Septic Tank and Associated Drain Field 1607-H4 Sanitary Sewer System 124-H-4 1607-H4 Septic Tank
Site Description:	This septic tank operated from 1948 to 1965. The unit includes a tile field. It has a six person capacity. The inlet invert elevation is 401.82. The average detention period is 24 hours.
Waste Types and Amounts:	The unit received sanitary sewage from 181-H River Pumphouse, amount unknown. The sewage per capita is 35 gal plus 20 % for sludge.
Site Dimensions:	Not listed in WIDS

OPERABLE UNIT 100-HR-2

Site Name: 118-H-1
Aliases: 100-H Burial Ground No. 1
Site Description: This burial ground operated from 1949 to 1965. The overall site runs east and west. There are numerous trenches of various dimensions, generally running north and south.
Waste Types and Amounts: This site contains dummy elements, processing tubing, and miscellaneous solid wastes.
Site Dimensions: 700 ft (l) x 350 ft (w) x 20 ft (d)

Site Name: 118-H-2
Aliases: H-1 Loop Burial Ground, 100-H Burial Ground No. 2
Site Description: This burial ground operated from 1955 to 1965. The site runs east-west and contains two in-line concrete vaults.
Waste Types and Amounts: The site received one stainless steel tube with associated hardware from an H-Reactor Experimental Test Facility in 1955. The second vault was used for disposal of contaminated pipe.
Site Dimensions: 140 ft (l) x 50 ft (w) x 15 ft (d)

Site Name: 118-H-3
Aliases: Construction Burial Ground
Site Description: This burial ground operated from 1953 to 1957. The site runs north-south. The trenches were covered with 6 ft of soil.
Waste Types and Amounts: The site contains sections of contaminated 16-in. pipe used as chutes for removal of thimbles from 105-H during outages, reactor hardware, and components from reactor modification programs.
Site Dimensions: 300 ft (l) x 200 ft (2) x 20 ft (d)

Site Name: 118-H-4
Aliases: Ball 3X Burial Ground
Site Description: This burial ground operated in 1953. The site consists of one trench running north-south. Concrete markers mark the north and south ends.
Waste Types and Amounts: The site contains irradiated material, such as vertical safety rod thimbles and guides, from 105-H during the Ball 3X Program.
Site Dimensions: 150 ft (l) x 30 ft (w) x 10 ft (d)

Site Name: 118-H-5
Aliases: 105-H Thimble Pit
Site Description: This burial ground operated from 1953 to 1960. The site consists of one trench. The site is covered with 5 ft of soil and marked with cement monuments.
Waste Types and Amounts: The site contains a thimble assembly from the B Experimental Hole, 105-H, buried in 1953. In 1960, the 105-H Pluto Crib (116-H-4) was excavated due to the construction of the 105-H Confinement System and placed in this site.
Site Dimensions: 30 ft (l) x 10 ft (w) x 2 ft (d)

OPERABLE UNIT 100-HR-2

Site Name: 126-H-1
Aliases: 184-H Powerhouse Ash Pit; 188-H Ash Disposal Area
Site Description: The ash pit operated from 1948 to 1965.
Waste Types and Amounts: Unknown amounts of coal ash were sluiced to the pit with raw river water. The ash has been analyzed using the EP Toxicity Test in accordance with WAC 173-303, and no hazardous materials were found.
Site Dimensions: No dimensions.

Site Name: 128-H-1
Aliases: 100-H Burning Pit; 100-H Burning Pit No. 1
Site Description: The burning pit operated from 1949 to 1965.
Waste Types and Amounts: The site was used for the disposal of nonradioactive combustible materials, such as paint waste, office waste, and chemical solvents.
Site Dimensions: 100 ft (l) x 100 ft (w) x 10 ft (d)

Site Name: 128-H-2
Aliases: 100-H Burning Ground #2
Site Description: This burning pit operated through 1965. The site is in a depression and looks like a graded rocky area with little soil. There is little surface evidence; however, there are rocks that have been exposed to fires.
Waste Types and Amounts: The site received combustible materials, (vegetation, office waste, paint waste, and chemical solvents).
Site Dimensions: 120 ft (l) x 80 ft (w)

Site Name: 128-H-3
Aliases: 100-H Burning Ground #3
Site Description: This site is covered with small rocks and very little dirt. There is little evidence of burning; only a few rocks show signs of exposure to fire.
Waste Types and Amounts: No information.
Site Dimensions: No dimensions.

Site Name: 132-H-2
Aliases: 117-H Filter Building
Site Description: The building operated from 1961 to 1965. The unit was a reinforced concrete structure, 35 ft high and 90% below grade. The maximum thickness of the walls and floors was 2 ft, with the majority being 15 in. thick. The ducts were made in reinforced concrete with a maximum wall thickness of 18 in. The inlet duct was 76 ft long and exhaust duct was 101 ft long. The site now resembles a gravel parking lot.
Waste Types and Amounts: Total radionuclide inventory in the 117-H Building is estimated to be 0.41 mCi. The radionuclides comprising this figure are H-3, C-14, Co-60, Cs-137, Sr-90, Eu-154, Eu-152, and Pu-239/240. Of these radionuclides, Sr-90 is the most restrictive in the ARCL calculations.
Site Dimensions: 59 ft (l) x 39 ft (w)

OPERABLE UNIT 100-HR-2

Site Name:	1607-H1
Aliases:	1607-H1 Septic Tank and Associated Drain Field; 124-H-1; 1607-H1 Sanitary Sewer System; 1607-H1 Septic Tank
Site Description:	This septic tank is active, and use began in 1948. The unit includes a tile field.
Waste Types and Amounts:	This unit receives sanitary sewage from 151-H and 105-H buildings. The flow rate to this unit is estimated at 140 gal/d.
Site Dimensions:	No dimensions.

Site Name:	1607-H3
Aliases:	1607-H3 Septic Tank and Associated Drain Field; 124-H-3; 1607-H-3 Sanitary Sewer System; 1607-HR Septic Tank
Site Description:	This septic tank operated from 1948 to 1968. The unit includes a tile field. It has a 100-person capacity. The inlet elevation is 405.51 and the outlet elevation is 401.59 (invert). The average detention period is 24 h.
Waste Types and Amounts:	This unit received sanitary sewage from 1701-H Badge House (security checkpoint), 1720-H Security Patrol Change Room and offices, and 1709-H Fire Station, amounts unknown. The sewage per capita is 35 gal plus 20% for sludge.
Site Dimensions:	Not listed in WIDS

OPERABLE UNIT 100-IU-2

Site Name: JA Jones 2
Aliases: J. A. Jones #2
Site Description: This burial ground was active from 1948 to 1955.
Waste Types and Amounts: This site contained minor construction equipment used by the JA Jones construction Company, including wood scraps, concrete, and some metallic waste.
Site Dimensions: 30 ft (l) x 30 ft (w) x 15 ft (d)

Site Name: 628-1
Aliases: White Bluffs Burn Pit
Site Description: This burning pit is inactive. The unit was covered with sand and gravel (cannot determine if it is natural erosion, backfill, or both). The size is unknown; however, physical evidence (e.g. small pieces of ash, etc.) indicates that the area affected was ~1/4 acre. Vegetation is stressed. Rabbit brush growth is almost nonexistent compared to the growth on the surrounding terrain and tumbleweeds are discolored and stressed. Verification of the site coordinates is required; they are based on coordinates for well #81-38.
Waste Types and Amounts: Soil sampling will be required to determine what contaminants are present.
Site Dimensions: None listed in WIDS.

Site Name: 600-5
Aliases: Asphalt Heliport
Site Description: This dumping area is inactive. The site consists of a circular asphalt or heavy oil area 15 ft in diameter, and an asphalt or heavy oil ditch 25 ft long, 15 in. wide and 1 in. deep near and to the southwest. Also located at the site is a metal flag about 18 in. long fastened to a 1/2 in. steel pipe. A 4-in. diameter pipe is stuck end wise in the center of the pad and flush with the surface. The surrounding area has many homestead type dumps. The asphalt or heavy oil material which makes up the pad and ditch does not appear to contain gravel, making its appearance different than that of typical roadway type asphalt. It is unknown whether the pad and ditch was planned construction or the result of the dumping of a heavy oil type substance; however, it appears to have been planned.
Waste Types and Amounts: The site contains asphalt or a heavy oil type substance.
Site Dimensions: Area = 230 ft^2
25 ft (l) x 1.25 ft (w) x .08 ft (d) 15 ft in diameter

Site Name: East White Bluffs City Landfill
Aliases: East White bluffs Landfill
Site Description: This landfill has been active from 1850 to 1943. The unit is an unlined excavation.
Waste Types and Amounts: The site was used to dispose of normal industrial and domestic wastes common for that period.
Site Dimensions: 100 ft (l) x 100 ft (w) x 10 ft (d)

OPERABLE UNIT 100-IU-2

Site Name:	White Bluffs Landfill
Aliases:	White Bluffs City Landfill
Site Description:	This landfill was active from 1850 to 1943. The unit is an unlined excavation.
Waste Types and Amounts:	The site was used for normal commercial and domestic wastes at the time. It contains no known radioactive constituents.
Site Dimensions:	125 ft (l) x 50 ft (w) x 10 ft (d)

OPERABLE UNIT 100-KR-1

Site Name: 116-K-1

Aliases: 100-K Crib; 100-K Pond; 116-K-1 Trench; 107-K Pond; 107-K(E) Pond

Site Description: This site operated in 1955. The unit is a structure within a structure, 200 by 200 ft at the bottom and 400 by 400 ft at the top of diked sides. One foot of gravel outlines the sides and bottom. The unit was backfilled over with earth and a 1-ft layer of gravel across the top. The inner excavation rests within a sand-filled excavation 10 ft wide at the sides, 10 ft deep, parallel to the inner structure. Both have a side slope of 4:1. The 16-in. sewer enters 27 ft below top grade. A 42-in. drain line enters northeast of the 16-in. line, 20 ft below the structure top. The natural ground elevation is 406 ft above MSL. An earth dike with a slope of 4:1 surrounds the unit from 7 ft below grade (bottom of outer structure) to 26 ft above natural ground (top of structure). A 2-ft-thick layer of riprap surrounds earth dike from natural grade to 11 ft above grade.

Waste Types and Amounts: The site received reactor coolant water from 107-K Retention Basins during reactor outages due to fuel ruptures.

Site Dimensions: Not listed in WIDS

Site Name: 116-K-2

Aliases: 100-K Mile Long Trench; K Trench; 116-K-2 Trench

Site Description: The trench operated from 1955 to 1971. The bottom width is 4 ft. The side slope is 1.5:1. The unit has spoil piles at the surface on both sides and 12-ft. top width.

Waste Types and Amounts: The site received all contaminated floor drains in the 105 buildings, low volume, and about 500 gal/min of KE and KW Reactors, metal storage basin overflow. Until KE and KW shut down about February 1, 1970, an undetermined amount of 107 Basin effluent leaked through 42-in. butterfly valves in the tank bottoms. Leakage was estimated at 10,000 to 20,000 gal/min. The valve leakage showed a history of increase until the 1968 valve and tank renovation. Leakage gradually increased again after these repairs. Other periodic flows included low volume, neutralized, dummy decontamination waste, process-cooling water during charge/discharge, 500 gal/min of metal storage basin flow, occasional special disposals, and occasional tanks of process cooling water that was collected after a fuel cladding failure.

Site Dimensions: 4,000 ft (l) x 45 ft (w) x 15 ft (d)

OPERABLE UNIT 100-KR-1

Site Name: 116-K-3
Aliases: 1904-K Outfall Structure; 1908-K Outfall Structure
Site Description: This outfall structure is active and operation started in 1955. The unit is an open, reinforced concrete water box divided into compartments. Effluent was normally discharged underwater near the center of the river; however, the structure could also discharge to the river through a spillway. The structure is 10 ft above grade and 20 ft below grade.
Waste Types and Amounts: The unit received reactor coolant water from the 107-K Retention Basins. The radionuclide content is unknown; low-level contamination is assumed.
Site Dimensions: 1,024 ft (area) 32 ft (l) x 32 ft (w)

Site Name: 116-KE-4
Aliases: 107-KE Retention Basins; 107-KE
Site Description: This retention basin operated from 1955 to 1971, and consisted of three carbon steel tanks with steel bottoms.
Waste Types and Amounts: This site received cooling water effluent from the 105-KE Reactor for radioactive decay and thermal cooling prior to release to the Columbia River. Eighty percent of the total radionuclide inventory is contained within the soil adjacent to the basin.
Site Dimensions: 300,000 ft^2 (area) 25 ft (d) x 250 ft (w)

Site Name: 116-KW-3
Aliases: 107-KW Retention Basin; 107-KW
Site Description: This retention basin operated from 1944 to 1970. The unit consisted of three carbon steel tanks.
Waste Types and Amounts: This site received cooling water effluent from the 105-KW Reactor for radioactive decay and thermal cooling prior to release to the Columbia River. Eighty percent of the total radionuclide inventory is contained within the soil adjacent to the basin.
Site Dimensions: Not listed in WIDS

OPERABLE UNIT 100-KR-2

Site Name:	116-KE-1
Aliases:	115-KE Condensate Crib
Site Description:	This crib operated from 1955 to 1971. The unit has 6 by 6 ft dimensions. The bottom is filled with coarse gravel to 1 ft above the bottom, backfilled over with dirt to grade. A square, ground-level wooden post marks the site; however, it has been covered over with asphalt paving.
Waste Types and Amounts:	The site received condensate and other waste from reactor gas purification systems.
Site Dimensions: (top)	40 ft (l) x 40 ft (d) x 26 ft (d)
Site Name:	116-KE-2
Aliases:	1706-KER Waste Crib
Site Description:	This crib was active from 1955 to 1971. A wooden crib structure rests within the excavation 3 ft above the bottom. The bottom 10 ft is filled with crushed stone and backfilled over. The distribution pipe enters the crib structure 23 ft below grade. The side slope is 1:1.
Waste Types and Amounts:	The site received wastes from cleanup columns in the 1706-KER loop.
Site Dimensions: (bottom)	16 ft (l) x 16 ft (w) x 32 ft (d)
Site Name:	116-KE-3
Aliases:	105-KE Storage basin French Drain 105-KW Basin Reverse Well
Site Description:	This reverse well was in use from 1955 to 1971. The site includes a drain field located 29 ft below grade with an 8 in. steel well casing extended downward to a point 10 ft below the mean water table. The bottom 20 ft of the well casing is perforated. A 4 in. steel test hole extended from the surface to the drain field but is no longer evident on the surface.
Waste Types and Amounts:	The site was used as an overflow weir for subdrainage from the 105-KE Storage Basin.
Site Dimensions:	78 ft deep and 20 ft in diameter
Site Name:	116-KE-5
Aliases:	150-KE Heat Recovery Station
Site Description:	This Test Treatment or Support Facility operated from 1955 to 1971. The unit consisted of heat exchangers and associated piping on a concrete pad.
Waste Types and Amounts:	Trace amounts of radioactive contamination remain on piping.
Site Dimensions:	Not listed in WIDS

OPERABLE UNIT 100-KR-2

Site Name: 116-KE-6A
Aliases: 1706-KE Condensate Collection Tank
1706-KE Waste Treatment System
Site Description: This storage tank has been active since 1986. The unit consists of a 96 gal condensate collection tank.
Waste Types and Amounts: The unit is used to treat radioactive mixed wastes generated in the laboratories of the 1706-KE Building. The system is used for the treatment of a wide variety of inorganic and organic laboratory wastes. The majority of these wastes are caustic or acidic solutions; thus, the waste can be considered a corrosive dangerous waste.
Site Dimensions: Not listed in WIDS

Site Name: 116-KE-6B
Aliases: 1706-KE Waste Treatment System
1706-KE Evaporation Tank
Site Description: This storage tank has been active since 1986. The unit consists of a 30 gal evaporation unit.
Waste Types and Amounts: The unit is used to treat radioactive mixed wastes generated in the laboratories of the 1706-KE Building. The system is used for the treatment of a wide variety of inorganic and organic laboratory wastes. The majority of these wastes are acidic or caustic solutions; thus, can be considered a corrosive dangerous waste.
Site Dimensions: Not listed in WIDS

Site Name: 116-KE-6C
Aliases: 1706-KE Waste Treatment System
1706-KE Waste Accumulation Tank
Site Description: This storage tank has been active since 1986. The unit consists of a 550 gal waste accumulation tank.
Waste Types and Amounts: The unit is used to treat radioactive mixed wastes generated in the laboratories of the 1706-KE Building. The system is used for the treatment of a wide variety of inorganic and organic laboratory wastes. The majority of these wastes are acidic or caustic solutions; thus, can be considered a corrosive dangerous waste.
Site Dimensions: Not listed in WIDS

OPERABLE UNIT 100-KR-2

Site Name: 116-KE-6D
Aliases: 1706-KE Waste Treatment System
1706-KE Ion Exchange Column
Site Description: The equipment has been in use since 1986. The unit consists of a 5 ft^3 mixed-bed resin ion exchange column.
Waste Types and Amounts: The unit is used to treat radioactive mixed wastes generated in the laboratories of the 1706-KE Building. The system is used for the treatment of a wide variety of inorganic and organic laboratory wastes. The majority of these wastes are acidic or caustic solutions; thus, can be considered a corrosive dangerous waste.
Site Dimensions: Not listed in WIDS

Site Name: 116-KW-1
Aliases: 115-KW Condensate Crib
Site Description: This crib was in use from 1955 to 1970. The bottom is filled with coarse gravel to 10 ft above bottom, backfilled over with dirt to grade. A square, ground-level wooden post marks the site; however, it has been covered with asphalt paving.
Waste Types and Amounts: The site received condensate and other wastewater from reactor gas purification systems.
Site Dimensions: Not listed in WIDS

Site Name: 116-KW-2
Aliases: 105-KW Storage Basin French Drain
105-KW Basin Reverse Well
Site Description: This reverse well was in operation from 1055 to 1970. The site includes a drain field located 29 ft below grade with an 8 in. steel well casing extending downward to a point 10 ft below the mean water table. The bottom 20 ft of the well casing is perforated. A 4 in. steel test hole extended from the surface to the drain field but is no longer evident at the surface.
Waste Types and Amounts: The site was used as an overflow weir for subdrainage from the 105-KW Storage Basin.
Site Dimensions: 78 ft deep and 20 ft in diameter

Site Name: 116-KW-4
Aliases: 150-KW Heat Recovery Station
Site Description: This Test Treatment or Support Facility was in use from 1955 to 1970. The unit consisted of heat exchangers and associated piping on a concrete pad.
Waste Types and Amounts: Trace amounts of radioactive contamination remain on piping.
Site Dimensions: Not listed in WIDS

OPERABLE UNIT 100-KR-2

Site Name: 118-K-1
Aliases: 100-K Burial Ground
118-K
Site Description: This burial ground was operated from 1953 to 1973 or 1975. The sit runs northwest-southwest and contains numerous pits, trenches, and silos. The trench and pit dimensions vary greatly.
Waste Types and Amounts: The unit contains numerous trenches and vertical steel pipes of various sizes that contain radioactive solid waste from K and N reactors. The incinerator operated for several years burning low-level contaminated combustible material. All contaminated burning was halted in October 1960.
Site Dimensions: 1,200 ft (l) x 600 ft (w) x 20 ft (d)

Site Name: 118-KE-1
Aliases: 105-KE Reactor Building
Site Description: This reactor was in operation from 1955 to 1971. The unit consists of; 1) a reactor block, which includes the graphite moderator stack, biological and thermal shields, pressure tubes and the safety and control systems; 2) the irradiated fuel storage basin; and 3) contaminated portions of the reactor building.
Waste Types and Amounts: The unit contains an estimated 58,000 Ci of radionuclides, 167 tons of lead, and 25,000 ft^3 of asbestos.
Site Dimensions: Not listed in WIDS

Site Name: 118-KE-2
Aliases: 105-KE Horizontal Control Rod Storage Cave
Site Description: This storage facility was in use from 1955 to 1971. This is a concrete tunnel covered with a 5 ft thick mound of earth.
Waste Types and Amounts: This site contains trace amounts of radionuclides. The radiation level at the entrance to the cave with the door open is 1 mR/h. The unit was used for temporary storage of radioactive rod tips for radioactive decay pending subsequent disposal.
Site Dimensions: Area = 1,000 ft^2
40 ft (l) x 25 ft (w)

Site Name: 118-KW-1
Aliases: 105-KW Reactor Building
Site Description: This reactor operated from 1955 to 1970. The unit consists of; 1) a reactor block, which includes the graphite moderator stack, biological and thermal shields, pressure tubes and the safety and control systems; 2) the irradiated fuel storage basin; and 3) contaminated portions of the reactor building.
Waste Types and Amounts: This unit contains an estimated 51,000 Ci of radionuclides, 155 tons of lead, and 25,000 ft^3 of asbestos.
Site Dimensions: Not listed in WIDS

OPERABLE UNIT 100-KR-2

Site Name:	118-KW-2
Aliases:	105-KW Horizontal Control Rod Storage Cave
Site Description:	This storage facility was in use from 1955 to 1971. The unit is a concrete tunnel covered with a 5 ft thick mound of earth.
Waste Types and Amounts:	The unit was used for temporary storage of irradiated and radioactive contaminated horizontal control rods containing unknown quantities of radionuclides. The tunnel contains four rod tips and other rod removal components. The radiation reading at the entrance to the cave with the door open is 50 mR/h.
Site Dimensions:	Area = 1,000 ft^2 40 ft (l) x 25 ft (w)

Site Name:	120-KE-8
Aliases:	165-KE Brine Pit
Site Description:	This brine pit was in use from 1955 to 1971. The unit is a concrete structure with 9 ft below grade and 1 ft above grade. An opening (hatch) into the structure is located in the center of the roof section. Just south of the unit is a valve pit 4 ft in diameter and encased with corrugated galvanized pipe. This valve pit contains residue and apparently was part of the brine operation.
Waste Types and Amounts:	The unit contains salt brine and residue. It is believed to have been used for product and not as a disposal site. Salt was off-loaded from rail cars and placed in the pit. Water was then circulated through the pit, and brine was pumped back to the 165-KE Power House for further use.
Site Dimensions:	Area = 160 ft^2 16 ft (l) x 10 ft (w) x 10 ft (d)

Site Name:	120-KW-6
Aliases:	165-KW Brine Pit
Site Description:	This brine pit was in use from 1955 to 1970. The unit is a concrete structure with 9 ft below grade and 1 ft above grade. An opening (hatch) into the structure is located in the center of the roof section. Just south of the unit is a valve pit 4 ft in diameter and encased with corrugated galvanized pipe. This valve pit contains residue and apparently was part of the brine operation.
Waste Types and Amounts:	The unit contains salt brine and residue. It is believed to have been used for product and not as a disposal site. Salt was off-loaded from rail cars and placed in the pit. Water was then circulated through the pit, and brine was pumped back to the 165-KW Power House for further use.
Site Dimensions:	Area = 160 ft^2 16 ft (l) x 10 ft (w) x 10 ft (d)

OPERABLE UNIT 100-KR-2

Site Name: 126-K-1
Aliases: 100-K Gavel Pit
Site Description: This demolition and inert landfill has been in operation since the 1970's. The unit is a gravel borrow pit that resulted from 100-K Area construction. The slope of the southwest corner contains demolition waste. The area is covered with pit run backfill material. The bottom contains one ~5 ft layer of demolition and inert waste covered with ~1 ft of pit run backfill material. Approximately 80 % of this unit is unused.
Waste Types and Amounts: The unit contains demolition and inert waste from 100-K area. Near Surface Test Facility (NSTF) at Gable Mountain, and Exploratory Shaft (ES) site. Primarily, waste consists of concrete, wood, steel pipe, structural steel, conduit, and wire.
Site Dimensions: Not listed in WIDS

Site Name: 130-K-1
Aliases: 1717-K Gasoline Storage Tank
Site Description: This storage tank was in use from 1955 to 1972.
Waste Types and Amounts: The unit was use for storage of gasoline (product).
Site Dimensions: Not listed in WIDS

Site Name: 130-K-2
Aliases: 1717-K Waste Oil Storage Tank
Site Description: This storage tank was in use from 1955 to 1972.
Waste Types and Amounts: The unit was used for storage of used motor oil.
Site Dimensions: Not listed in WIDS

Site Name: 130-KE-1
Aliases: 105-KE Emergency Diesel Oil Storage Tank
150-KE Emergency Diesel Fuel Tank
Site Description: This storage tank was in use from 1955 to 1971. The unit has a 2,000 gal capacity.
Waste Types and Amounts: The unit was used for storage of diesel fuel (product).
Site Dimensions:

Site Name: 130-KE-2
Aliases: 166-KE Oil Storage Tank
Site Description: This storage tank was in use from 1955 to 1971. The unit has a storage capacity of 1,650,000 gal.
Waste Types and Amounts: The unit was used for storage of oil (product) for the 165-KE boilers.
Site Dimensions: Not listed in WIDS

Site Name: 130-KW-1
Aliases: 105-KW Emergency Diesel Oil Storage Tank
105-KW Emergency Diesel Fuel Tank
Site Description: This storage tank was in operation from 1955 to 1970. The tank has a 2,000 gal capacity.
Waste Types and Amounts: The unit was used for storage of diesel fuel (product).
Site Dimensions: Not listed in WIDS

OPERABLE UNIT 100-KR-2

Site Name:	130-KW-2
Aliases:	166-KW Oil Storage Tank
Site Description:	This storage tank operated from 1955 to 1970. The tank has a storage capacity of 1,650,000 gal.
Waste Types and Amounts:	The tank was used for storage of oil (product) for the 165-KW boilers.
Site Dimensions:	Not listed in WIDS

Site Name:	132-KE-1
Aliases:	116-KE Reactor Exhaust Stack
Site Description:	The stack was in use from 1955 to 1971.
Waste Types and Amounts:	Discharged ventilated air from the 105-KE Building flowed through concrete ducts directly out of the stack.
Site Dimensions:	Area = 380 ft^2 300 ft (l) x 22 ft (w)

Site Name:	132-KW-1
Aliases:	116-KW Reactor Exhaust Stack
Site Description:	The stack was in use from 1955 to 1970.
Waste Types and Amounts:	Discharged ventilation air from the 105-KW Building flowed though the concrete ducts directly out the exhaust stack.
Site Dimensions:	area = 380 ft^2 330 ft (l) x 22 ft (w)

Site Name:	1607-K4
Aliases:	1607-K4 Septic Tank and associated Drain Field 124-K-2 1607-K4 Sanitary Sewer System 1607-K4 Septic Tank
Site Description:	This septic tank has been active since 1955. The unit includes a tile field.
Waste Types and Amounts:	The unit receives sanitary sewage from the 1704-K Office Building and the 1717-K Maintenance Shop.
Site Dimensions:	Not listed in WIDS

Site Name:	1607-K6
Aliases:	1607-K6 Septic Tank and Associated Drain Field 124-KW-1 1607 Sanitary Sewer System 1607-K6 Septic Tank
Site Description:	This septic tank has been operating since 1955 and includes a tile field.
Waste Types and Amounts:	This unit receives sanitary sewage from 105-KW Reactor Building, 115-KW Gas Recirculation Building, and 165-KW Powerhouse.
Site Dimensions:	Not listed in WIDS

OPERABLE UNIT 100-KR-3

Site Name: 120-KE-1
Aliases: 183-KE Filter Waste Facility Dry Well
100-KE-1
183-KE Filter Water Facility
Site Description: This French drain operated from 1955 to 1971. The unit has a wooden cover.
Waste Types and Amounts: The site received sulfuric acid sludge that was removed from sulfuric acid storage tanks.
Site Dimensions: 4 ft (l) x 4 ft (w) x 4 ft (d)

Site Name: 120-KE-2
Aliases: 183-KE Filter Waste Facility French Drain
100-KE-2
183-KE Filter Waster Facility
Site Description: This French drain was in operation from 1955 to 1971. The unit has an open bottom.
Waste Types and Amounts: The site received sulfuric acid sludge that was removed from sulfuric acid storage tanks.
Site Dimensions: 3 ft deep and 3 ft in diameter

Site Name: 120-KE-3
Aliases: 100-KE-3
183-KE Filter Water Facility Trench
Site Description: This trench was in operation from 1955 to 1970. The unit was lined with sand, and the sludge-water slurry was allowed to drain.
Waste Types and Amounts: The site received sulfuric acid sludge that was removed from sulfuric acid storage tanks.
Site Dimensions: 40 ft (l) x 3 ft (w) x 3 ft (d)

Site Name: 120-KE-4
Aliases: 183-KE1 Sulfuric Acid Storage Tank
Site Description: This storage tank was used from 1955 to 1971. The unit is located above ground and has a storage capacity of 10,109 gal.
Waste Types and Amounts: The unit was used for storage of sulfuric acid product.
Site Dimensions: Not listed in WIDS

Site Name: 120-KE-5
Aliases: 183-KE2 Sulfuric Acid Storage Tank
Site Description: This storage tank was used from 1955 to 1971. The unit is located above ground and has a storage capacity of 10,109 gal.
Waste Types and Amounts: The unit was used for storage of sulfuric acid product.
Site Dimensions: Not listed in WIDS

Site Name: 120-KE-6
Aliases: 183-KE Sodium Dichromate Tank
Site Description: This storage tank was in use from 1955 to 1971.
Waste Types and Amounts: The unit was used for storage of sodium dichromate.
Site Dimensions: Not listed in WIDS

OPERABLE UNIT 100-KR-3

Site Name:	120-KE-9
Aliases:	183-KE Brine Pit
Site Description:	This brine pit was in operation from 1955 to 1971. This unit is an underground concrete structure consisting of five chambers. The roof of the structure is at ground level with a hatchway into each chamber. Four of the hatchways have wooden covers and the fifth has a metal cover.
Waste Types and Amounts:	The unit contains salt brine and residue. It is believed to have been used for product material and not for disposal. The salt was used in regenerating water softeners.
Site Dimensions:	Area = 391 ft^2 23 ft (l) x 17 ft (w) x 10 (d)

Site Name:	120-KW-1
Aliases:	183-KW Filter Water Facility Dry Well 100-KW-1
Site Description:	This French drain was in use from 1955 to 1970. The unit has a wooden cover.
Waste Types and Amounts:	The site received sulfuric acid sludge that was removed from sulfuric acid storage tanks.
Site Dimensions:	4 ft (l) x 4 ft (w) x 4 ft (d)

Site Name:	120-KW-2
Aliases:	183-KW Filter Water Facility French Drain 100-KW-2
Site Description:	This French drain operated from 1955 to 1970. This unit has an open bottom.
Waste Types and Amounts:	The site received sulfuric acid sludge that was removed from Sulfuric acid storage tanks.
Site Dimensions:	3 ft deep and 3 ft in diameter

Site Name:	120-KW-3
Aliases:	183-KW1 Sulfuric Acid Storage Tank
Site Description:	This storage tank was in use from 1955 to 1970. The unit is located above ground and has a storage capacity of 10,109 gal.
Waste Types and Amounts:	The unit was used for storage of sulfuric acid (product).
Site Dimensions:	Not listed in WIDS

Site Name:	120-KW-4
Aliases:	183-KW2 Sulfuric Acid Storage Tank
Site Description:	This storage tank was operated from 1955 to 1970. The unit is located above ground and has a storage capacity of 10,109 gal.
Waste Types and Amounts:	The unit was used for the storage of sulfuric acid (product).
Site Dimensions:	Not listed in WIDS

OPERABLE UNIT 100-KR-3

Site Name:	120-KW-5
Aliases:	183-KW Sodium Dichromate Storage Tank
Site Description:	This storage tank was in operation from 1955 to 1971.
Waste Types and Amounts:	The unit was used for storage of sodium dichromate (product).
Site Dimensions:	Not listed in WIDS

Site Name:	120-KW-7
Aliases:	183-KW Brine Pit
Site Description:	This brine pit was in operation from 1955 to 1970. The unit is an underground concrete structure consisting of five chambers. The roof of the structure is at ground level with a hatchway into each chamber. Four of the hatchways have wooden covers, and the fifth has a metal cover.
Waste Types and Amounts:	The unit contains salt brine and residue. It is believed to have been used for product material and not for disposal. The salt was used for regenerating water softeners.
Site Dimensions:	Area = 391 ft^2 23 ft (l) x 17 ft (w) x 10 ft (d)

Site Name:	120-KW-7
Aliases:	183-KW Brine Pit
Site Description:	This brine pit was in use from 1955 to 1970. The unit is an underground concrete structure consisting of five chambers. The roof of the structure is at ground level with a hatchway into each chamber. Four of the hatchways have wooden covers, and the fifth has a metal cover.
Waste Types and Amounts:	The unit contains salt brine and residue. It is believed to have been used for product material and not for disposal. The salt was used for regenerating water softeners.
Site Dimensions:	Area = 391 ft^2 23 ft (l) x 17 ft (w) x 10 ft (d)

Site Name:	126 KE-2
Aliases:	183-KE Liquid Alum Storage Tank #2
Site Description:	This storage tank was used from 1955 to 1971. The unit has a storage capacity of 180,000 gal.
Waste Types and Amounts:	The unit was used for storage of liquid alum.
Site Dimensions:	Not listed in WIDS

Site Name:	126-KE-3
Aliases:	183-KE Liquid Alum Storage Tank #1
Site Description:	This storage tank was used from 1955 t 1971.
Waste Types and Amounts:	Not listed in WIDS
Site Dimensions:	Not listed in WIDS

OPERABLE UNIT 100-KR-3

Site Name:	128-K-1
Aliases:	100-K Burning Pit
Site Description:	This burning pit was operated from 1955 to 1971.
Waste Types and Amounts:	The site was used for the disposal of nonradioactive, combustible materials, such as paint waste, office waste, and chemical solvents.
Site Dimensions:	100 ft (l) x 100 ft (w) x 10 ft (d)

Site Name:	128-K-2
Aliases:	100-K Construction Dump
Site Description:	This burning pit has not been covered with fill. A single chain fence with asbestos warning sign marks the area.
Waste Types and Amounts:	A wide variety of trash is exposed on the surface. There is evidence of burning in many places. Most of the material on the surface is scrap metal and glass. Office waste, paint, solvents, laboratory waste have also been found. The area is also covered with nonfriable and friable asbestos.
Site Dimensions:	Area = 75,000 ft^2 800 ft (l) x 280 ft (w)

Site Name:	130-K-3
Aliases:	182-K Emergency Diesel Oil Storage Tank 182-K Emergency cooling Flow Diesel Tank
Site Description:	This storage tank was used from 1955 to 1971. The unit consists of two storage tanks with storage capacity of 17,500 gal.
Waste Types and Amounts:	The two tanks were used for storage of diesel oil (product).
Site Dimensions:	Not listed in WIDS

Site Name:	600-4
Aliases:	Howitzer Site
Site Description:	The site type is a military installation. The overall site covers an area of ~3 to 5 acres. It includes a garbage trench, an old military tent city, and gun emplacements. A portion of a large gravel pit located ~300 yd south of Route 1 and west of the railroad tracks was used as the garbage trench. To the northwest is the remains of the old military tent city.
Waste Types and Amounts:	This unit contains various types of solid wastes including old food containers, 5-gal gas and oil cans, empty ammo crates (confirmed to be empty), and two piles of coal ~20 ft in diameter. In addition to old military containers and ammo boxes, a 5-gal drum with holes in the bottom was found. The drum was partially buried and appeared to be some type of french drain or sewage facility.
Site Dimensions: (top)	Area = 217,800 ft^2

OPERABLE UNIT 100-KR-3

Site Name: 600-29
Aliases: 100-K Construction Lay-down Area.
Site Description: The unit is approximately 46 acres and consists of an abandoned dumping area containing several rectangular depressions and waste burning sites.
Waste Types and Amounts: Unit waste consists of miscellaneous metals, wood, cans, bottles, construction hardware and materials, what appears to be tar dumped on the ground, buckets and mops covered with what appears to be tar, 5 gal bucket of oily rags, broken pieces of a toilet bowl, what appears to be asbestos and transite, and wire rope.
Site Dimensions: Area = 2,000,000 ft^2
2,000 ft (l) x 1,000 ft (w)

Site Name: 1607-K1
Aliases: 1607-K1 Septic Tank and Associated Drain Field
124-K-1
1607-K1 Sanitary Sewer System
1607-K1 Septic Tank
Site Description: This septic tank has been in operation since 1955. The unit also includes a tile field.
Waste Types and Amounts: The unit receives sanitary sewage from 1701-K Badgehouse (security checkpoint), 1720-k Patrol Change Room and offices, and 1721-k Trailer. The flow rate to this unit is estimated at 525 gal/d.
Site Dimensions: Not listed in WIDS

Site Name: 1607-K2
Aliases: 1607-K2 Septic Tank and Associated Drain Field
124-KE-1
1607-K2 Sanitary Sewer System
1607-K2 Septic Tank
Site Description: This septic tank has been in use since 1955. The unit includes a tile field.
Waste Types and Amounts: This unit receives sanitary sewage from 183-KE Water Treatment Plant. The flow rate to this unit is estimated at 350 gal/d.
Site Dimensions: Not listed in WIDS

Site Name: 1607-K3
Aliases: 1607-K3 Septic Tank and Associated Drain Field
124-KW-2
1607-K3 Sanitary Sewer System
1607-K3 Septic Tank
Site Description: The septic tank operated from 1955 to 1970. The unit includes a tile field.
Waste Types and Amounts: This unit received sanitary sewage from 183-KW Water Treatment Plant, amount unknown.
Site Dimensions: Not listed in WIDS

OPERABLE UNIT 100-KR-3

Site Name:	1607-K5
Aliases:	1607-K5 Septic Tank and Associated Drain Field 124-KE-2 1607-K5 Sanitary Sewer System 1607-k5 Septic Tank
Site Description:	This septic tank has been operating since 1955. The unit includes a tile field.
Waste Types and Amounts:	The unit receives sanitary sewage from 1706-KER Flow Laboratory, 1706-K Water Treatment Laboratory, 165-KE Powerhouse, 105-KE Reactor Building, and 115-KE Gas Recirculation System. The flow rate to this unit is estimated at 700 gal/d.
Site Dimensions:	Not listed in WIDS

OPERABLE UNIT 100-NR-1

Site Name:	116-N-1
Aliases:	1301-N Liquid Waste Disposal Facility 1301-N Crib and Trench
Site Description:	This crib was in operation from 1964 to 1985. This unit is a rectangular basin. The bottom is filled with 3 ft of large stones. An extension trench for the unit measured 50 ft by 1,600 ft. The trench surface has been covered with concrete slabs, but there was a flow of waste underground from the unit into the trench.
Waste Types and Amounts:	The unit received radioactive water containing activation and fission products and small quantities of corrosive liquids and laboratory chemicals at an average flow rate of ~1,500 gal/min. The crib received radioactive effluent streams from 105-N and 109-N. After 1965, the trench received the same wastes as the crib.
Site Dimensions:	125 ft (l) x 290 ft (w) x 12 ft (d)

Site Name:	116-N-2
Aliases:	1310 Chemical Waste Storage Tank The Golf Ball 1310-N Waste Storage Area
Site Description:	The storage tank was been in use since 1964. The unit is a collecting tank for N Reactor primary piping decontamination wastes.
Waste Types and Amounts:	Not listed in WIDS
Site Dimensions:	Not listed in WIDS

Site Name:	116-N-3
Aliases:	1325-N Liquid Waste Disposal Facility 1325-N Crib and Trench
Site Description:	The crib has been in use since October 1983. This unit consists of a rectangular concrete diversion box with 250 by 240 ft dimensions, a concrete header box, and ~1,200 ft of 36 in. diameter pipeline connecting the diversion box to the header box. The unit is covered with precast, prestressed concrete panels. An extension trench for the unit is 3,00 ft long, 10 ft wide and 7 ft deep. The trench is divided into 4 equal sections and is covered with precast, prestressed concrete panels.
Waste Types and Amounts:	This unit receives radioactive activation and fission products and small quantities (below regulatory limits) of corrosive liquids and laboratory chemicals.
Site Dimensions:	Not listed in WIDS

OPERABLE UNIT 100-NR-1

Site Name:	116-N-4
Aliases:	1300-N Emergency Dump Basin
Site Description:	This storage tank was used from December 1963 to 1973. The unit is steel-lined and has a 1,00,000 gal capacity.
Waste Types and Amounts:	The site receives steam blowdown from 105-N steam generators containing low levels of radioactive activation and fission products. The unit handled ~82,000 gal/mo. The unit no longer receives wastewater from the steam generators. The water level is maintained with clean water. The 109-N blowdown was routed to the Emergency Dump Tank.
Site Dimensions:	130 ft (l) x 80 ft (w)

Site Name:	116-N-8
Aliases:	163-N Mixed Waste and Hazardous Waste Container Storage Pad 116-N-8 Storage Pad
Site Description:	The storage pad has been in use since December 1986. Containers are stored on a curbed and fenced concrete pad.
Waste Types and Amounts:	This site receives radioactively contaminated oil and miscellaneous hazardous process chemicals in drums and containers, amount variable based on operations.
Site Dimensions:	152 ft (l) x 60 ft (w)

Site Name:	118-N-1
Aliases:	100-N Area Silos 100-N Area Spacer Silos 118-N
Site Description:	This silo has been in use since 1963. This unit is a temporary storage facility containing 3 silos, each 16 ft in diameter. When the silos are filled, the contents are shipped to the 200 Area Burial Grounds, where they are permanently buried.
Waste Types and Amounts:	This site receives radioactive metallic fuel spacers (byproduct) from the reactor, quantities variable based on reactor operations. Radioactively contaminated fuel spacers are temporarily stored in the underground silos and then shipped to the 200 Area Lowlevel Burial Grounds for disposal. No water was released to this facility after 1984.
·te Dimensions:	Not listed in WIDS

OPERABLE UNIT 100-NR-1

Site Name:	120-N-1
Aliases:	1324-NA Percolation Pond
Site Description:	This pond has been in use since August 1977. The total volume is ~2M gal.
Waste Types and Amounts:	Until 1983, the site received corrosive wastes and filter backwash water. From 1983 to May 1986, the site received corrosive wastes only, while filter backwash water was routed to the 130-N-1 (183-N Filter Backwash Pond). From May 1986 to November 1988, the unit received neutralized wastewater from the 120-N-2 (1324-N Surface Impoundment) at a rate of 324,000 gal per demineralizer regeneration cycle. After November 1988, the unit has received neutralized wastewater between a maximum range of pH 4 and 11.
Site Dimensions:	Area = 29,000 ft^2

Site Name:	120-N-2
Aliases:	1324-N Surface Impoundment
Site Description:	This neutralization unit was in use from May 13, 1986 to November 7, 1988. The unit is double lined with 45-mil Hypalon.
Waste Types and Amounts:	The unit received sodium hydroxide and sulfuric acid from the 163-N Demineralization Water Treatment Plant. The unit hold ~324,000 gal of demineralization regeneration waste that was neutralized before being pumped to the 120-N-1 (1324-NA Percolation Pond).
Site Dimensions:	Not listed in WIDS

Site Name:	120-N-3
Aliases:	163-N Neutralization Pit and French Drain
Site Description:	This French drain was in use from December 1963 to March 1988.
Waste Types and Amounts:	The unit received unknown amounts of corrosive liquids, such as sodium hydroxide and sulfuric acid.
Site Dimensions:	Not listed in WIDS

Site Name:	120-N-4
Aliases:	1310-N Hazardous Waste Staging area 1310-N Waste Oil Storage Pad 1310-N Non-Hazardous Waste Pad
Site Description:	This staging area has been active since November 1985. The waste is stored in drums and containers, which are stored on a curbed concrete pad.
Waste Types and Amounts:	Typical waste in staging consists of nonradioactive, chemically contaminated oil and miscellaneous process chemicals. Quantities are variable depending on reactor operations.
Site Dimensions:	100 ft (l) by 75 ft (w)

OPERABLE UNIT 100-NR-1

Site Name: 120-N-5
Aliases: 108-N/163-N Transfer Line Neutralization Pit
Site Description: This neutralization unit has been active since 1963. The unit is a concrete pit line with polymer concrete.
Waste Types and Amounts: The unit receives sodium hydroxide and sulfuric acid from transfer pipes contained in a concrete trench.
Site Dimensions: Not listed in WIDS

Site Name: 120-N-6
Aliases: 108-N Acid Tank Vent French Drains
Site Description: This French drain was used from 1963 to March 1988. Five French drains associated with condensate from sulfuric acid tanks.
Waste Types and Amounts: The units received unknown amounts of condensate from sulfuric acid tanks and transfer lines in intermittent discharges. Each discharge is estimated to have averaged less than 1 gal of liquid.
Site Dimensions: Not listed in WIDS

Site Name: 120-N-7
Aliases: 100-N Acid Unloading Facility French Drain
Site Description: This French drain was in use from 1963 to March 1987.
Waste Types and Amounts: The unit received unknown amounts of sulfuric acid in intermittent discharges. Each discharge is estimated to have averaged less than 1 gal of liquid.
Site Dimensions: Not listed in WIDS

Site Name: 120-N-8
Aliases: 163-N Sulfuric Acid Tank Vent French Drain
Site Description: This French drain was in use from December 1963 to March 1988.
Waste Types and Amounts: The unit received unknown amounts of sulfuric acid in intermittent discharges. Each discharge is estimated to have averaged less than 1 gal of liquid.
Site Dimensions: Not listed in WIDS

Site Name: 124-N-1
Aliases: 124-N-1 Septic Tank
100-N Sanitary Sewer System No. 1
Site Description: This Septic Tank has been in use since 1963. The unit includes a seepage pit, has 200 ft^2 of infiltration area, and 2,300 gal of fluid storage space.
Waste Types and Amounts: The unit receives sanitary sewage, ~1,400 gal/d.
Site Dimensions: Not listed in WIDS

OPERABLE UNIT 100-NR-1

Site Name:	124-N-2
Aliases:	124-N-2 Septic Tank 100-N Sanitary Sewer System No. 2
Site Description:	This septic tank has been in operation since 1963. The unit includes a seepage pit with 200 ft^2 of in filtration surface area and 2,300 gal storage capacity.
Waste Types and Amounts:	The unit receives sanitary sewage, ~200 gal/d
Site Dimensions:	Not listed in WIDS
Site Name:	124-N-3
Aliases:	124-N-3 Septic Tank 100-N Sanitary Sewer System No. 3
Site Description:	This septic tank has been in operation since 1982. This unit is a cesspool with a solid cover, resting on 2 ft of crushed stone, and consisting of a 500 gal precast concrete perforated pipe.
Waste Types and Amounts:	This unit receives sanitary sewage, ~45 gal/d
Site Dimensions:	Not listed in WIDS
Site Name:	124-N-4
Aliases:	100-N Sanitary Sewer System No. 4 124-N-4 Septic Tank
Site Description:	This septic tank was used from 1963 to February 1987. The unit includes a drain field. Two septic tanks had a total capacity of 14,000 gal. and the total infiltration surface area of the drain field was 8,900 ft^2.
Waste Types and Amounts:	The unit received sanitary sewage, ~30,000 gal/d.
Site Dimensions:	Not listed in WIDS
Site Name:	124-N-5
Aliases:	100-N Sanitary Sewer System No. 5 124-N-5 Septic Tank
Site Description:	This septic tank was used from 1981 to February 1987. The unit includes a drain field. Tank volume was 3,700 gal, and the drain field filtration surface area was 960 ft^2.
Waste Types and Amounts:	The unit received sanitary sewage, ~3,800 gal/d.
Site Dimensions:	Not listed in WIDS
Site Name:	124-N-6
Aliases:	100-N Sanitary Sewer System No. 6 124-N-7 Septic Tank
Site Description:	This septic tank was used from 1979 to 1984. The unit includes a drain field. The tank volume was 2,000 gal, and the drain field infiltration surface area was 600 ft^2.
Waste Types and Amounts:	This unit received sanitary sewage, unknown amount.
Site Dimensions:	Not listed in WIDS

OPERABLE UNIT 100-NR-1

Site Name: 124-N-7
Aliases: 100-N Sanitary Sewer System No. 7
124-N-7 Septic Tank
Site Description: This septic tank was in used from 1984 to February 1987. This unit includes a drain field. The tank volume was 7,500 gal, and the drain field infiltration surface area was 5,500 ft^2.
Waste Types and Amounts: This unit received sanitary sewage, ~5,200 gal/d.
Site Dimensions: Not listed in WIDS

Site Name: 124-N-8
Aliases: 100-N Sanitary Sewer System No. 8
124-N-8 Septic Tank
Site Description: This septic tank was used from 1983 until February 1987. This unit includes a drain field. The tank volume was 5,00 gal, and the drain field has a infiltration surface area of 1,650 ft^2.
Waste Types and Amounts: This unit received sanitary sewage, ~900 gal/d.
Site Dimensions: Not listed in WIDS

Site Name: 124-N-9
Aliases: 124-N-9 Septic Tank
100-N Sanitary Sewer System No. 9
Site Description: This septic tank has been in use since 1985. The unit has a drain field. The tank volume was 3,000 gal, and the drain field has an infiltration surface are of 3,500 ft^2.
Waste Types and Amounts: This unit receives sanitary sewage, ~2,200 gal/d.
Site Dimensions: Not listed in WIDS

Site Name: 124-N-10
Aliases: 124-N-10 Sanitary Sewer System
100-N Central Sewer System No. 10
Site Description: This sewage lagoon has been in use since February 1987.
Waste Types and Amounts: The unit receives sanitary sewage, ~50,000 gal/d.
Site Dimensions: Not listed in WIDS

Site Name: 128-N-1
Aliases: 100-N Burning Pit
128-N-1 Burning Pit
Site Description: This burning pit was used from 1963 to 1989. The site shows evidence of burning: trash and cans. Most of the site has been backfilled.
Waste Types and Amounts: Combustible materials, such as nuisance vegetation and combustible wastes (office waste, tools and hardware, possible paints and solvents, have been burned at this site, amounts unknown. Since the establishment of the Hanford Central landfill (in the early 1970's), this unit has been used for burning nuisance vegetation only.
Site Dimensions: Not listed in WIDS

OPERABLE UNIT 100-NR-1

Site Name: 130-N-1
Aliases: 183-N Backwash Discharge Pond
126-N-1
183-N Filter Backwash Pond
Site Description: This pond has been in use since 1983.
Waste Types and Amounts: The unit receives filter backwash containing polyacrylamide and aluminum sulfate.
Site Dimensions: Not listed in WIDS

Site Name: 600-32
Aliases: N Area Landfill
Site Description: This dumping area is approximately 32 acres and consists of an abandoned gravel pit and several depressions which were used as dumping areas for 100-N reactor and/or the generating plant. Steel casing, described as a well head, exists near the northern edge of the unit.
Waste Types and Amounts: Unit waste includes 5 gallon paint cans (one labeled SCC Portland 26 5 65, one labeled USS 5-28/26-65, one labeled ICC=37-76-80 NRC, others are crushed), sheet aluminum, steel pipes, rebar, transite, cans wood, two 55 gal drums (one labeled Delvac 1330 SAE-30 motor oil), concrete, wire, cable and spools, bottles (soda pop and amber 1 gallon jugs), broken florescent and incandescent light bulbs, tires, grass clippings and miscellaneous construction debris.
Site Dimensions: Area = 1,400.000 ft^2
1,400 ft (l) x 1,00 ft (w) x 20 ft (d)

Site Name: 600-35
Aliases:
Site Description: This dumping area is in active with out operation dates. This relatively flat site appears to be a former rock crushing/screening operation and borrow pit (on the northern edge). The ground is covered with fine gravel chips with little or no vegetation. A well-head (number 87-55) and the 100-N export water line were noted on the southern edge and along the east-west line of the site, respectively.
Waste Types and Amounts: Miscellaneous surface debris was the only waste identified at this site. This debris included a ladder, an 8 in. diameter steel pipe, metal scrap wire rope, miscellaneous wood debris, pieces of aluminum, and a container lid (no markings). A deteriorated 12 volt lead-acid battery of the type used in heavy equipment. a 55 gallon drum (no marking) was observed approximately 250 ft west of the site.
Site Dimensions: Area = 90,000 ft^2
300 ft (l) x 300 ft (w)

OPERABLE UNIT 300-FF-1

Site Name: 300 Area Ash Pits
Aliases:
Site Description: This ash pit has been active since 1975. The unit consists of two separate excavations that are 15 to 20 ft deep.
Waste Types and Amounts: Coal flyash is periodically sluiced from the 384 Powerhouse to the pits with water at the rate of 15M gal/yr. Analysis of the flyash according to 173-303 WAC indicates it is non-EP toxic.
Site Dimensions: Not listed in WIDS

Site Name: 300 Area Filter Backwash Pond
Aliases:
Site Description: This pond has been active since April 14, 1987. The unit consists of a single basin about 20 to 25 ft deep.
Waste Types and Amounts: The unit receives 20M gal/yr of water and nonhazardous alum from backwashing filters. Analysis of the backwash has show it to be nonhazardous.
Site Dimensions: Not listed in WIDS

Site Name: 300 Area Retired Filter Backwash Pond
Aliases:
Site Description: This pond was in use from 1975 to January 1987. This interim backwash pond was an active gravel pit.
Waste Types and Amounts: The unit received 10M to 20M gal/yr of water and nonhazardous alum from backwash filters. Analysis of the backwash has shown it to be nonhazardous.
Site Dimensions: Not listed in WIDS

Site Name: 300 Area Sanitary Sewer System
Aliases:
Site Description: This sewer has bee in use since 1975. The unit is comprised of a parallel septic tank arrangement that empties into two 1,000 ft long trenches.
Waste Types and Amounts: This unit receives ~109.5M gal/yr of sanitary wastes and air conditioner cooling water. Prior to 1985, discharges from the 3713 Sign Shop included an estimated 1 gal/wk of miscellaneous photochemicals used in the process.
Site Dimensions: Not listed in WIDS

OPERABLE UNIT 300-FF-1

Site Name:	316-1
Aliases:	South (old) Pond 300 Area South Process Pond
Site Description:	This pond was in use from 1945 to May 1975. An 8 acre area containing 5 separate pond sections. Ponds 1, 2, and 3 are separated by two 30 ft dikes, with the largest pond (No. 4) separated from 1, 2, and 3 (west side) by a 16 ft dike and from pond No. 5 (east side) by 100 ft of land. The dikes were bulldozed into 3 sections, and the fill was used to cover loose material.
Waste Types and Amounts:	The site received cooling water and low-level liquid wastes from the 3706 and 321 buildings, process waste from the 321 building, wastes from the Hot Semiworks Laboratory, organic wastes, and water from 303 building floor drains. This unit has contained has contained large amounts of copper and uranium, but most of these contaminates were remove when the bottom of the unit was periodically dredged. The total site inventory is 2.0 Ci.
Site Dimensions:	600 ft (l) x 375 ft (w) x 9 ft (d)
Site Name:	316-2
Aliases:	North (new) Pond 300 Area North Process Pond
Site Description:	This pond was in operation from 1949 to May 1974. This site consists of 7 separate sections separated by 21 ft wide dikes, with the entire 10 acre area surrounded by a dike 15 ft wide and ~10 ft high.
Waste Types and Amounts:	The site received low-level radionuclide liquid wastes and cooling water from 3706 and 321 buildings, aqueous wastes containing unirradiated uranium from the Hot Semiworks Laboratory, and water from the floor drains in the 303 buildings. The waste flowed through the 307 Retention Basin en route to this unit.
Site Dimensions:	620 ft (l) x 600 ft (w) x 10 ft (d)

OPERABLE UNIT 300-FF-1

Site Name:	316-5
Aliases:	3904 Process Waste Trenches 300 Area Process Trenches
Site Description:	This trench has been active since May 1975. The unit consists of two trenches running north-south, 60 ft apart (between centerlines). Each trench is 1,535 ft long, 10 ft wide and 12 ft deep, with a side slope of 1:1.5. Separating the trenches is an earth dike, 50 ft wide at the bottom (top width varies) and 12 ft high.
Waste Types and Amounts:	This unit serves a discharge site for the 300 Area Process Sewer System. The site receives ~2.6M gal of water per day. This water was chlorinated by the water filter plant for the 300 Area and contains minerals added to the water during use. Water discharged to the process sewer is used primarily for condensates, janitorial solutions from washing and waxing floors, water treatment (primarily salt), laboratories, process water from fuel fabrication and other aqueous solutions not designated as dangerous wastes by WAC-173-303. The annual waste quantity is one billion pounds per year and reflects the total flow to the unit, not a volume of dangerous waste discharged to the unit. No dangerous wastes have been discharged to the unit since November 1985.
Site Dimensions:	Not listed in WIDS
Site Name:	340 Complex HWSA
Aliases:	340 Complex Hazardous Waste Staging Area
Site Description:	This satellite area has been active since 1954.
Waste Types and Amounts:	The outside area typically contains miscellaneous empty drums (20 to 30 drums/mo) and nonregulated waste oils. This area is no longer used to stage hazardous waste.
Site Dimensions:	Not listed in WIDS
Site Name:	618-4
Aliases:	Burial Ground No. 4 318-4
Site Description:	This burial ground was used from 1955 to 1961. The unit contains elongated pits that were filled and covered with clean dirt.
Waste Types and Amounts:	The site contains an unknown quantity of uranium-contaminated miscellaneous materials.
Site Dimensions:	570 ft (l) x 220 ft (w) x 15 ft (d)

OPERABLE UNIT 300-FF-1

Site Name: 618-5
Aliases: Burial Ground No. 5
Regulated Burning Ground
318-5
Site Description: This burial ground was used from 1945 to 1962. The site contains a burning trench oriented northeast-southwest by its largest dimension.
Waste Types and Amounts: The site was used for the disposal of uranium-bearing trash. This site was also used as an above ground storage area for uranium-bearing materials.
Site Dimensions: 300 ft (l) x 18 ft (w) x 15 ft (d)

Site Name: 618-12
Aliases: North Process Pond Scraping Disposal Area
Site Description: This burial ground was used from 1949 to 1964. The North Process Pond Scraping Disposal Area extends ~200 ft south of the North Process Ponds.
Waste Types and Amounts: This site was used for the disposal of uranium-contaminated soil that was scraped from the 316-2 Pond (North Process Pond) and some Uranium-contaminated soil that was removed fro beneath the 321 Building during excavation for hydraulic core mockup.
Site Dimensions: 400 ft (l) x 200 ft 9w) x 8 ft (d)

Site Name: 628-4
Aliases:
Site Description: This burning pit was used in 1962. At present (8-22-91), the site is covered wit flyash (stabilized). The stabilized area is 4 ft above grade and covered with light vegetation.
Waste Types and Amounts: The unit was used mainly for burning paper, wood, paint cans, and other operations debris; however, some incidental radioactive material may have been also burned.
Site Dimensions: Not listed in WIDS

OPERABLE UNIT 300-FF-2

Site Name: 300 Area Solvent Evaporator
Aliases: Solvent Evaporator
Site Description: This evaporator was used from 1975 to November 1985. The unit was a treatment tank for radioactive contaminated spent solvents generated in the fuel fabrication process at the 300 Area. Treatment of the wastes occurred by evaporation in a Brooks Load Lugger tank. The tank (Type A82; Series 3F) is 96 in. long, 65 in. wide (top), 50 in. wide (bottom), and 35 in. deep, with A sheet metal lid.
Waste Types and Amounts: The unit received ~600 gal/yr of solvents and steam condensate. The solvents consisted mainly of spent trichloroethylene, perchloroethylene, 1,1,1-trichloroethane, and a ethyl acetate/bromine solution. Paint shop solvents that were potentially treated include methyl ethyl ketone, methylene chloride, and petroleum naphtha.
Site Dimensions: Not listed in WIDS

Site Name: 300 Area Vitrification Test Site
Aliases: In Situ Vitrification Test Site
Site Description: This test treatment or support facility operated from 1983 to 1986.
Waste Types and Amounts: Vitrification was performed on wastes containing the following radionuclides: Am-241, 0.0095 Ci; Pu-239, 0.0053 Ci; Pu-238, 0.0018 Ci; Cs-137, 0.020 Ci; Ru-106, 0.021 Ci; Sr-90, 0.680 Ci; Co-60, 0.010 Ci.
Site Dimensions: Not listed in WIDS

Site Name: 600-22
Aliases: UFO Landing Site
Site Description: Site type is dumping area. The unit appears as a large asterisk on aerial photos. Ground inspection indicates some minor vegetation disturbance, and round cone shaped holes.
Waste Types and Amounts: Bomb fragments were found scattered throughout the unit.
Site Dimensions: Not listed in WIDS

Site Name: 618-1
Aliases: Solid Waste Burial Ground No. 1
318-1
Site Description: This burial ground was used from 1944 to 1951. The unit consisted of at least two trenches running north-south, 16 ft wide (surface) by 200 ft long by 8 ft deep. Also, a series of pits 20 ft deep by 15 ft wide run east-west.
Waste Types and Amounts: The site contains large quantities of plutonium and fission products from the 300 Area laboratories fuel fabrication with incidental additional waste from a very small laboratory operation.
Site Dimensions: Not listed in WIDS

OPERABLE UNIT 300-FF-2

Site Name:	618-2
Aliases:	Solid Waste Burial Ground No. 2 318-2
Site Description:	This burial ground was in use from 1951 to 1954. The unit contains four trenches running east-west. Each trench is 51 ft wide (top width) by 150 ft long by 15 ft deep with a bottom width of 6 ft.
Waste Types and Amounts:	The unit was used for disposal of uranium-contaminated equipment and materials, plutonium, and fission products. The uranium waste was typically solid metallic uranium oxides in the form of metal cuttings from Reactor Fuel Fabrication facilities in the 300 Area.
Site Dimensions:	350 ft (l) x 215 ft (w) x 15 ft (d)

Site Name:	618-3
Aliases:	Solid Waste Burial ground No. 3 318-3 Burial Ground #3
Site Description:	This burial ground was in use from 1954 to 1955. The unit consists of one large trench running north-south.
Waste Types and Amounts:	The site was primarily used for the disposal of uranium waste in the form of contaminated building material derived from the 313 buildings.
Site Dimensions:	350 ft (l) x 165 ft (w) x 15 ft (d)

Site Name:	618-7
Aliases:	Solid Waste Burial Ground No. 7 Burial Ground #7 318-7
Site Description:	This burial ground either started in 1960 or 1955 and ended in either 1973 or 1956. The unit consists of two drive-in, east-west oriented trenches. The V-shaped pit in the center (~N56550) was used for thoria disposal.
Waste Types and Amounts:	The site contains low-level uranium and thorium bearing material from the 300 Area fuel manufacturing. This unit contains drummed containers of solvent with moderate amounts of uranium. This material was segregated and disposed in this site because of the pyrolitic and explosive hazard of the solvent. Materials buried at this site were derived primarily from the 321 Building.
Site Dimensions:	1,120 ft (l) x 650 ft (w) x 12 ft (d)

OPERABLE UNIT 300-FF-2

Site Name:	618-8
Aliases:	Solid Waste Burial Ground No. 8 318-8 Early Solid Waste Burial Ground
Site Description:	This burial ground was used from 1943 to 1944. This unit contains a number of burial trenches. A parking lot was constructed over the majority of the site. Subsequently, the radiation monuments were cut down at grade.
Waste Types and Amounts:	The site was used mainly for the disposal of uranium-contaminated solid waste derived from reactor fuels manufacturing.
Site Dimensions:	600 ft (l) x 100 ft (w) x 15 ft (d)

Site Name:	618-9
Aliases:	300 West Burial Ground 318-9
Site Description:	This burial ground operated from 1950 to 1954 or 1956. The site consists of an open excavation with the excavated soil lining the trench on the north and south sides. The site will be backfilled in May or June 1992 pending EPA approval. Approximately 300 yd southeast of and outside the unit french is a mound of soil suspected of being contaminated. The soil is from the 303 Area and is covered with 4 ft of clean fill.
Waste Types and Amounts:	It was thought the site contained 55 gal drums of uranium-contaminated organic solvent (5,000 gal) from the 321 Building. Approximately 1,600 gal of solvent (NPH/TBP, MIBK) and over 1,400 ft^3 of debris were removed from the site. The debris, among other things, included empty waste drums, a wheel barrow, corrugated siding, process vessels, piping, two bags of ammonium nitrate fertilizer (breached), unidentified white powders and several lead bricks. The debris was disposed of in the low-level burial grounds. The recovered solvent is currently stored at the site, within the chainlink fence, in 55 gal steel drums packaged in 85 gal steel overpack drums. These drums are inspected weekly.
Site Dimensions:	180 ft (l) x 40 ft (w) x 15 ft (d)

Site Name:	618-13
Aliases:	318-13 303 Area contaminated Soil Burial Site
Site Description:	This burial ground operated in 1951 or 1950 to 1974 or 1950. The unit consists of a mound of soil piled to ~50 ft high by 125 ft long by 50 ft wide, covered with 2 ft of clean soil. The mound of covered contaminated material has been posted as a radiation zone.
Waste Types and Amounts:	This site received the topsoil from the 303 Building area. Total activity buried here is not known.
Site Dimensions:	Not listed in WIDS

OPERABLE UNIT 300-FF-3

Site Name: 300 Area Interim Filter Backwash Disposal
Aliases:
Site Description: This neutralization unit was used from January 7, 1987 to April 14, 1987.
Waste Types and Amounts: The unit received water and nonhazardous alum from backwashing filters used to filter water for sanitary and process use, ~650,000 gal. Analysis of the backwash has shown it to be nonhazardous.
Site Dimensions: Not listed in WIDS

Site Name: 300 Area Powerhouse HWSA
Aliases: 300 area Powerhouse Hazardous Waste Staging Area
Site Description: This satellite area has been in use since the 1940's.
Waste Types and Amounts: This area is no longer used to stage hazardous wastes. The outside area typically contains nonregulated waste oils.
Site Dimensions: Not listed in WIDS

Site Name: 300 Area RLWS and 340 Complex
Aliases: 300 Area Radioactive Liquid Waste Sewer
Site Description: This sewer has been in use since 1954. Piping is stainless steel with an outer pipe of fiberglass, reinforced plastic and continuous leak detection systems between the outer and inner pipes. Waste is accumulated in stainless steel tanks at the 340 Complex. an underground vault houses 15,000 gal neutralization tanks. The 340 Building provides a control room and decontamination facility. The 340-B Building is divided lengthwise by a concrete shield wall. The east side contains the rail car loadout facility. The west side is a radioactive waste storage area.
Waste Types and Amounts: The unit receives radioactive wastes from various 300 Area research and development laboratories. Wastes consist primarily of water with small quantities of various chemicals from the laboratories, decontamination solutions, and acids and bases. The waste is stored for less than 90 days and is then transported to the 200 West Area for storage and disposal.
Site Dimensions: Not listed in WIDS

Site Name: 300 Area Retired RLWS
Aliases: 300 Area Retired Radioactive Liquid Waste Sewer System
Site Description: This sewer was used from 1954 to 1975. The pipes are ~ 4,062 ft long, buried 10 ft below grade. The pipe outlet is at the 340 Facility.
Waste Types and Amounts: The unit received radioactive wastes from various 300 Area facilities including the fuel fabrication and research and development laboratories. Wastes consisted primarily of water with small quantities of various chemicals from laboratories, decontamination solutions, aqueous solutions from fuel fabrication, and acids and basses. Approximately 100,000 gal/yr were received from the sewer.
Site Dimensions: Not listed in WIDS

OPERABLE UNIT 300-FF-3

Site Name: 300-1
Aliases: Old North Richland Automotive Maintenance Yard
Site Description: This dumping yard consists of three open bulldozer cuts, each ~5 ft by 10 ft by 4 ft deep. A slab of asphalt ~15 ft by 20 ft is also present.
Waste Types and Amounts: The area was used by North Richland residents to conduct automotive repairs and recreational activities. No evidence exists to support any belief that radiological contamination may have occurred at the site. Debris in the area includes empty bottles, lumber, empty cans of automotive oil, five-gallon cans and buckets, an 18 in. wooden wire spool, an automotive front grill, old automotive oil filters, etc. There may be unknowns present which contain hazardous constituents.
Site Dimensions: Not listed in WIDS

Site Name: 303-K Contaminated Waste Storage
Aliases:
Site Description: This storage facility has been in use since 1954 or January 1986. The liquid wastes are stored on a pad in a 600 ft^2 area within the building. The solid wastes are stored outside the building on an asphalt and concrete pad with an area of ~3,500 ft^2. The storage area is surrounded by chain link fence.
Waste Types and Amounts: The area is used for storage of containers of small quantities of miscellaneous wastes (waste oils, cutting lubricants) potentially contaminated with uranium and the occasional storage of concreted waste from the 304 facility, heat treat salts, and solids from 313 recovery operations. approximately fifty to one hundred 55 gal drums/yr are accumulated.
Site Dimensions: Not listed in WIDS

Site Name: 303-M Storage Area
Aliases: 303-M Building Storage Area
Site Description: This storage area was used in May 1983.
Waste Types and Amounts: The area was used for storage of uranium metal chips and fines (ignitable) awaiting treatment in the 303-M Oxidation Facility. Waste quantities were estimated at 31 tons/yr (FY 1986 generation rate).
Site Dimensions: Not listed in WIDS

Site Name: 303-M Uranium Oxide Facility
Aliases:
Site Description: This test treatment or support facility was used in May 1983.
Waste Types and Amounts: The oxidation process feed material was uranium containing zircalloy-2 meal chips and fines (ignitable). Approximately 31 tons/yr uranium (FY 1986 generation rate) were converted to a nonignitable oxide via incineration.
Site Dimensions: Not listed in WIDS

OPERABLE UNIT 300-FF-3

Site Name: 304 Concretion Facility
Aliases:
Site Description: This test treatment or support facility has been in use from January 1969 or 1971.
Waste Types and Amounts: Previous waste for treatment consisted of scrap metal (beryllium/zirconium alloy) lathe chips and depleted uranium (2.1%) chips and fines.
Site Dimensions: Not listed in WIDS

Site Name: 304 Storage Area
Aliases: 304 Building Storage Area
Site Description: This storage facility was active in January 1969 or 1971.
Waste Types and Amounts: Currently, no wastes are at this facility. The area was used for storage of containers of miscellaneous, potentially contaminated wastes, primarily heat treat salts and sodium chloride, potassium chloride, sodium nitrate), depleted uranium chips and fines (ignitable), and beryllium/zirconium chips and fines (ignitable and carcinogenic). The chips and fines were in storage awaiting concretion. Approximately fifty to one hundred 55 gal drums/yr were accumulated.
Site Dimensions: Not listed in WIDS

Site Name: 305-B Storage Facility
Aliases:
Site Description: This storage facility has been in use since January 1978. The unit is a waste assembly area that services Research and Development operations as a 300 area satellite storage area. Wastes are brought to the facility for storage, repackaging, and/or waste consolidation. The storage design capacity is 30,000 gal.
Waste Types and Amounts: The wastes consist of listed wastes, wastes from nonspecific sources, characteristic wastes, and state-only wastes.
Site Dimensions: Not listed in WIDS

Site Name: 307 Retention Basin
Aliases:
Site Description: This unit consists of four 50,000 gal basins used for the waste water collection system.
Waste Types and Amounts: Process waste water from 300 area facilities is routed through these units prior to discharge to the 300 Area Process Trench. The flow is about 1M to 4M gal/d.
Site Dimensions: Not listed in WIDS

Site Name: 309-TW-1
Aliases: 309-TW Tank #1
Site Description: This storage tank was used from 1960 to 1973. The capacity of the tanks is 5,026.
Waste Types and Amounts: The unit received aqueous nonnhazardous radioactive wastes from the operation of the Plutonium Recycle Test Reactor (PRTR).
Site Dimensions: Not listed in WIDS

OPERABLE UNIT 300-FF-3

Site Name:	309-TW-2
Aliases:	309-TW Tank #2
Site Description:	This storage tank was used from 1960 to 1973. The capacity of the tanks is 5,141 gal.
Waste Types and Amounts:	The unit received aqueous nonhazardous radioactive wastes from the operation of the Plutonium Recycle Test Reactor (PRTR).
Site Dimensions:	Not listed in WIDS

Site Name:	309-TW-3
Aliases:	309-TW Tank #3
Site Description:	This storage tank was used from 1960 to 1973. The capacity of the tanks is 4,185 gal.
Waste Types and Amounts:	The unit received aqueous nonhazardous radioactive wastes from the operation of the Plutonium Recycle Test Reactor (PRTR).
Site Dimensions:	Not listed in WIDS

OPERABLE UNIT 300-FF-3

Site Name:	309-WS-1
Aliases:	Reactor Ion Exchange Pit PRTR Ion Exchange Vault
Site Description:	This equipment was used from November 1963 to 1969. The site consists of an underground vault and the ion exchange columns inside. The vault consists of 2 stories, the upper level housing the ion exchange columns which are positioned vertically, and the lower level for spent ion exchange columns. The upper level is constructed of reinforced concrete, 19 ft square and 18 ft deep with 2 ft thick walls and floor. There are two 2 ft 10 in. dia holes with concrete plugs in the floor for access to the lower level. Three layers of concrete cover block, totaling 6 ft thick, are fitted in a step-configuration at grade level. The lower level is constructed of 1 ft 3 in. thick structural concrete measuring 15.5 ft ID. by 22 ft deep, on a 20 ft dia octagonal concrete base. There are 8 in. of gravel on the floor of the lower level.
Waste Types and Amounts:	The ion exchange columns were used to remove contaminants from heavy water coolant and shield cooling systems. The site may contain any or all of the following exchangers: IX-2 (Reflector Loop Cleanup), IX-3 (Moderator Loop Cleanup), IX-1 (primary Loop Cleanup), IX-4 (Top and Bottom Shield Cooling Loop) pre-1966, and BIX-5 (Boron Removal Exchanger) post-1966. The dimensions range from 1.5 ft to 2.5 ft diameter, by 8 ft to 10 ft long. The volumes range from 7.9 ft^3 to 22 ft^3. Anion resins (strong basic quaternary ammonium compound converted to hydroxide form) and cation resins (highly acidic sulfonic acid type converted to hydrogen form) were used, including Amberlite XE-77 and XE-78. The columns were welded in place. Some columns were changed out in the 1960's; the old ones, containing their resins, were dropped into the metal pit below. Between 2 and 7 still remain in the lower level.
Site Dimensions:	Area = 361 ft^2 19 ft (l) x 19 ft (w) x 41.5 ft (d)

OPERABLE UNIT 300-FF-3

Site Name: 309-WS-2

Aliases: Rupture Loop Ion Exchange Pit
Ion Exchange Vault

Site Description: This equipment was used from November 1963 to 1969. The site consists of an underground vault and the ion exchange columns inside. The vault is constructed of reinforced concrete with 1 ft thick walls and floor, not lined. the vault is fitted with 4 ft thick concrete cover blocks and is sectioned into five bays: four bays for ion exchange columns. and one bay with 1 in. steel plating on the floor and a drain. The drain line from this pit goes to a sump in the corner of Room 20 in the 309 building. The sump is currently dry. It is assumed that the exchangers have drained. A rain cover is installed over the top to prevent rainwater from entering the vault.

Waste Types and Amounts: The ion exchange columns were used to remove contaminants and fission fragments from light water coolant. There are reportedly 4 ion exchange columns still in the vault. Three columns are 2 ft 4 in. I.D. by 8 ft long, with A capacity of 27 ft^3. RLIX-1 was a cation exchanger, RLIX-2 was a Mixed Bed exchanger, and RLIX-3 was a deoxygenator. The fourth column, a boron exchanger, was added in 1968. This column is 1 ft 6 in. O.D. by 6 ft 3 in. long.

Site Dimensions: Area = 414 ft^2
26.16 ft (l) x 15.83 ft (w) x 16 ft (d)

Site Name: 311 Methanol Tank 1

Aliases: 311 Tank Farm Underground Methanol Tank #1
311-1

Site Description: This storage tank was used from 1955 to 1971.

Waste Types and Amounts: The unit contained ~10,000 gal of a 4% aqueous solution of methanol. Methanol was previously used as a drying agent for the aluminum cleaning process.

Site Dimensions: Not listed in WIDS

Site Name: 311 Methanol Tank 2

Aliases: 311 Tank Farm Underground Methanol Tank #2
311-2

Site Description: This storage tank was used from 1955 to 1971.

Waste Types and Amounts: The unit contained ~10,000 gal of a 4% aqueous solution of methanol. Methanol was previously used as a drying agent for the aluminum cleaning process.

Site Dimensions: Not listed in WIDS

OPERABLE UNIT 300-FF-3

Site Name: 311-TK-40
Aliases: 311 Neutralized Waste Tank 1
Site Description: This storage tank is constructed of stainless steel with a 4,000 gal capacity.
Waste Types and Amounts: This storage tank is currently empty. It received 420,000 gal/yr of waste consisting of neutralized liquid from the nonrecoverable uranium stream and filtrate from processing of the uranium-bearing waste stream from the 313 Building recovery operations.
Site Dimensions: Not listed in WIDS

Site Name: 311-TK-50
Aliases: 311 Neutralized Waste Tank 2
Site Description: This storage tank has operated since March 1973 or 1971. It is constructed of stainless steel with a 5,000 gal capacity.
Waste Types and Amounts: This unit receives 420,000 gal/yr of waste consisting of neutralized liquid from the nonrecoverable uranium stream and filtrate from processing of the uranium-bearing waste stream from the 313 Building recovery operations. Occasionally used for decanting wastes.
Site Dimensions: Not listed in WIDS

Site Name: 313 Centrifuge
Aliases:
Site Description: This equipment has been in use since April 1973. This part of the 300 Area Waste Acid Treatment System.
Waste Types and Amounts: Not listed in WIDS
Site Dimensions: Not listed in WIDS

Site Name: 313 Copper Remelt Operations
Aliases: 313 Building Copper Remelt Operations
Site Description: This test treatment or support facility was active in the early 1970's.
Waste Types and Amounts: Copper-silicon alloy waste from the fuel fabrication process was melted, cast, and machined in preparation for reuse. The unit processed 600 lb/d when in operation.
Site Dimensions: Not listed in WIDS

Site Name: 313 East Side Storage Pad
Aliases: 313 Building East Site Storage Pad
Site Description:
Waste Types and Amounts: This area is no longer used to stage hazardous wastes. It was used for storage of byproduct waste materials from the fuel fabrication process, including neutralized solids (sodium fluoride; sodium nitrate; sodium sulfate; and metal precipitates, including copper uranium, zirconium) from the 313 Recovery Operations process. Approximately 320,000 lb/yr (total for this waste stream for the 313 Building, inside and outside storage, and at the 303-K Storage Pad) were accumulated.
Site Dimensions: Not listed in WIDS

OPERABLE UNIT 300-FF-3

Site Name: 313 Filter Press
Aliases:
Site Description: This equipment has been in use since April 1973. This is part of the 300 Area Waste Acid Treatment System.
Waste Types and Amounts:
Site Dimensions: Not listed in WIDS

Site Name: 313 Methanol Tank
Aliases: 313 Building Underground Methanol Storage Tank
Site Description: This storage tank was used from 1955 to 1971.
Waste Types and Amounts: Prior to 1987, the unit contained ~600 gal of an aqueous solution of methanol.
Site Dimensions: Not listed in WIDS

Site Name: 313-TK-2
Aliases: 313 Waste Acid Neutralization Tank
Site Description: This neutralization tank has been active since 1973. This is part of the 300 Area Waste Acid Treatment System.
Waste Types and Amounts:
Site Dimensions: Not listed in WIDS

Site Name: 313 Uranium Recovery Operations
Aliases: Uranium Recovery Operations
Site Description: This test treatment or support facility has been active since before 1950.
Waste Types and Amounts: The unit receives ~270,000 gal/yr of waste acids from the fuels fabrication process containing nonrecoverable and recoverable uranium. Approximately 28,4 tons of uranium are recovered (FY 1986 generation rate).
Site Dimensions: Not listed in WIDS

Site Name: 313 Uranium Recovery Operations
Aliases: uranium Recovery Operations
Site Description: This test treatment or support facility has been active since before 1950.
Waste Types and Amounts: The unit receives ~270,000 gal/yr of waste acids from the fuels fabrication process containing nonrecoverable uranium. Approximately 28.4 tons of uranium are recovered (FY 1986 generation rate).
Site Dimensions: Not listed in WIDS

Site Name: 315 Retired Sanitary Drain Field
Aliases:
Site Description: This drain field was used from 1950 to 1978.
Waste Types and Amounts: The unit received unknown amounts of sanitary wastes from office buildings.
Site Dimensions:

OPERABLE UNIT 300-FF-3

Site Name: 316-3
Aliases: 307 Disposal Trenches
Process Water Trenches
Site Description: This trench was in use from 1953 to 1963. The unit consists of two trenches, each ~450 ft long, 10 ft wide at the east end, and 30 ft wide at the west end. The depth varies from at least 12 ft to 27 ft. the trenches run in an east and west direction, ~20 ft apart, and each contains a 5 in. V.C.P. line running the entire length of the unit. The method of waste release from piping is unknown. Two parallel trenches, 600 ft by 10 ft by 20 ft deep.
Waste Types and Amounts: The site received waste from the Hot Semiworks Laboratory area (329 biophysics Laboratory, 327 Radiometallurgy Building, 324 Radiochemistry Building, 326 Pile Technology Building, and 329 Mechanical Development Building) and sludge from 316-1 Pond. These wastes went through the 307 Retention Basin before releasing to this unit.
Site Dimensions: 600 ft (l) x 10 ft (w) x 20 ft (d)

Site Name: 323 Tank 1
Aliases:
Site Description: This storage tank was used from 1945 to 1968. The 20,000 gal unit is located in a vault.
Waste Types and Amounts: The unit received uranium contaminated water and acid solutions from reprocessing research and development. The volume of liquid remaining is unknown.
Site Dimensions: 48 ft long and 10 ft in diameter

Site Name: 323 Tank 2
Aliases:
Site Description: This storage tank was used from 1945 to 1968. The 20,000 gal unit is located in a vault.
Waste Types and Amounts: The unit received uranium contaminated water and acid solutions from reprocessing research and development. The volume of liquid remaining is unknown.
Site Dimensions: 48 ft long and 10 ft in diameter

Site Name: 323 Tank 3
Aliases:
Site Description: This storage tank was used from 1945 to 1968. The 20,000 gal unit is located in a vault.
Waste Types and Amounts: The unit received uranium contaminated water and acid solutions from reprocessing research and development. The volume of liquid remaining is unknown.
Site Dimensions: 48 ft long and 10 ft in diameter

OPERABLE UNIT 300-FF-3

Site Name: 323 Tank 4
Aliases:
Site Description: This storage tank was used from 1945 to 1968. The 20,000 gal unit is located in a vault.
Waste Types and Amounts: The unit received uranium contaminated water and acid solutions from reprocessing research and development. The volume of liquid remaining is unknown.
Site Dimensions: 48 ft long and 10 ft in diameter

Site Name: 324 Sodium Removal Pilot Plant
Aliases: 324 Building Sodium Removal Pilot Plant
Site Description: This test treatment of Support Facility has been active since 1979. The unit is an RMW alkali metal treatment facility (no longer than 90 day storage). Treatment occurs in a steel tank that is used to circulate nitrogen or argon with water vapor to react with the alkali metal on the component being processed.
Waste Types and Amounts: Not listed in WIDS
Site Dimensions: Not listed in WIDS

Site Name: 325 Waste Treatment Facility
Aliases:
Site Description: This test treatment or support facility has been active since 1978. The facility serves two purposes: 1) to treat small quantities of diverse chemical and radioactive mixed wastes generated from ongoing R & D activities, and 2) to serve as an R & D facility to test and evaluate the effectiveness of thermal, physical/chemical, and/or biological treatment technologies.
Waste Types and Amounts: Waste handled in this facility include listed wastes, wastes from nonspecific sources, characteristic wastes, and state-only wastes.
Site Dimensions:

Site Name: 331 LSL Drain Field
Aliases: 331 Life Sciences Laboratory Drainfield
Site Description: This drainfield was used from 1970 to 1974.
Waste Types and Amounts: The unit received ~.66 gal/h of sanitary wastewater.
Site Dimensions: Not listed in WIDS

Site Name: 331 LSL Trench 1
Aliases: 331 Life Sciences Laboratory Trench #1
Site Description: This trench was active from 1966 to 1969.
Waste Types and Amounts: The unit received ~9.0 gal/h of sanitary wastewater.
Site Dimensions:

Site Name: 331 LSL Trench 2
Aliases: 331 Life Sciences Laboratory Trench #2
Site Description: This trench was active from 1969 to 1974.
Waste Types and Amounts: The unit received ~8.33 gal/h of sanitary wastewater.
Site Dimensions: Not listed in WIDS

OPERABLE UNIT 300-FF-3

Site Name:	331-C HWSA
Aliases:	331-C Hazardous Waste Staging Area
Site Description:	This staging area has been active since 1970.
Waste Types and Amounts:	The area typically contains corrosives, ignitables, and regulated empty containers, ~600 gal/yr total.
Site Dimensions:	Not listed in WIDS

Site Name:	333 East Side HWSA
Aliases:	333 Building East Side Hazardous Waste Staging Area
Site Description:	This staging area has been active since 1964.
Waste Types and Amounts:	The area contains miscellaneous small quantities of waste oils, cutting lubricants, chemicals, and solvents, etc. stored in containers. In previous years, the area was used for miscellaneous radioactive and hazardous waste storage. Approximately twenty-five to fifty 55 gal drums/yr are accumulated.
Site Dimensions:	Not listed in WIDS

Site Name:	333 East Side Heat Treatment Salt Storage Area
Aliases:	
Site Description:	This storage facility was active in 1964.
Waste Types and Amounts:	This area is no longer used for storing hazardous wastes. It has stored containers of solidified waste heat-treat salts from the Fuels Fabrication Facility. The waste consisted of sodium chloride, potassium chloride, sodium nitrate, and potassium nitrate. approximately thirty to fifty 55 gal drums/yr were accumulated.
Site Dimensions:	Not listed in WIDS

Site Name:	333 Laydown HWSA
Aliases:	333 Laydown Hazardous Waste Staging Area
Site Description:	This staging area has been active since 1971.
Waste Types and Amounts:	The area typically contains corrosive and EP toxic (for chromium) wastes.
Site Dimensions:	Not listed in WIDS

Site Name:	333-TK-7
Aliases:	333 West Side Storage Tank for Uranium Bearing Acid 333 Chromium Treatment Tank
Site Description:	This storage tank was used in 1963.
Waste Types and Amounts:	The unit is empty. It was used for storage of spent etch acids (nitric and sulfuric acid with uranium in solution). Estimated accumulation rate was 60,000 gal/yr. Not all of this volume was routed to the storage tanks outdoors; most was routed to a storage tank inside the facility.
Site Dimensions:	Not listed in WIDS

OPERABLE UNIT 300-FF-3

Site Name:	333-TK-11
Aliases:	333 West Side Storage Tank for Uranium Bearing Acid 333 Chromium Treatment Tank 2
Site Description:	This storage tank was used in 1963.
Waste Types and Amounts:	The unit is empty. It was used for storage of spent etch acids (nitric and sulfuric acid with uranium in solution). Estimated accumulation rate was 60,000 gal/yr. Not all of this volume was routed to the storage tanks outdoors; most was routed to a storage tank inside the facility.
Site Dimensions:	Not listed in WIDS
Site Name:	333 West Side Waste Oil Tank
Aliases:	333 Building West Side Storage Tank for Waste Oil
Site Description:	This storage tank has been in use since August 1972.
Waste Types and Amounts:	The unit is used for storage of waste oil from the extrusion press sump. Waste oil is verified to be non-PCB and nonignitable prior to removal for offsite shipment. Approximately 500 to 1,000 gal/yr are accumulated.
Site Dimensions:	Not listed in WIDS
Site Name:	334 Tank Farm Waste Acid Storage Tank
Aliases:	
Site Description:	This storage tank was used from 1971 to January 1986.
Waste Types and Amounts:	The unit was used infrequently for storage of waste acids containing nonrecoverable uranium from the fuel fabrication process.
Site Dimensions:	Not listed in WIDS
Site Name:	334-A-TK-B
Aliases:	334-A Waste Acid Storage Tank 1
Site Description:	This storage tank was active from April 1973 to January 1975 (possibly).
Waste Types and Amounts:	The unit is empty. It received 210,000 gal/yr of waste acids from the fuel fabrication process. The waste contained nonrecoverable uranium (primarily hydrofluoric, nitric, sulfuric, and chromic acids, with copper, zirconium, and uranium in solution).
Site Dimensions:	Not listed in WIDS
Site Name:	334-A-TK-C
Aliases:	334-A Waste Acid Storage Tank 2
Site Description:	This storage tank was active from April 1973 to January 1975 (possibly).
Waste Types and Amounts:	The unit is empty. It received 210,000 gal/yr of waste acids from the fuel fabrication process. The waste contained nonrecoverable uranium (primarily hydrofluoric, nitric, sulfuric, and chromic acids, with copper, zirconium, and uranium in solution).
Site Dimensions:	Not listed in WIDS

OPERABLE UNIT 300-FF-3

Site Name: 335 & 336 Retired Sanitary Drain Fields
Aliases:
Site Description: This drain field was active from 1973 to 1978.
Waste Types and Amounts: The unit received unknown amounts of sanitary wastes from office buildings.
Site Dimensions: Not listed in WIDS

Site Name: 350 HWSA
Aliases: 350 Building Hazardous Waste Staging Area
Site Description: This staging area has been active since 1982.
Waste Types and Amounts: Typically, the area contains ~600 gal/yr of corrosives, 600 gal/yr of used oils and PCB-contaminated oils, and 40 nonregulated, empty containers per year.
Site Dimensions: Not listed in WIDS

Site Name: 618-6
Aliases: Solid Waste Burial Ground #6
Site Description: This burial ground was used from 1944 to 1946. The unit no longer exists. It was originally located in the vicinity of the 325 Building and was moved two time thereafter due to the construction of buildings at its locations. It was first located at the site of the 325 Building from 1944 to 1946, next moved to the site of the 324 Building, existing from 1957 to 1962. In 1962, the contents were removed to the 618-10 Burial Ground when the area was needed for construction.
Waste Types and Amounts: The unit contained Solid uranium waste.
Site Dimensions: Not listed in WIDS

Site Name: 3712 Uranium Scrap Storage Area
Aliases: 3712 Building Uranium Scrap Storage Area
Site Description: This storage facility has been active since 1960.
Waste Types and Amounts: The unit is used to store uranium scrap awaiting transportation for recovery to the feed site (Fernald, Ohio). Waste quantities are estimated at 140 ton/yr (FY 1986 generation rate). Previously, the area was used to store concreted billets of ignitable uranium chips and fines.
Site Dimensions: Not listed in WIDS

Site Name: 3713 Paint Shop Hazardous Waste Satellite Area
Aliases:
Site Description: This staging area was used from 1984 to 1987.
Waste Types and Amounts: Hazardous wastes are no longer accumulated at this facility. The paint shop was moved. The area contained miscellaneous small quantities (less than 55 gal accumulated at any one time) of waste solutions, including solvents and paint shop solids from paint shop operations. Approximately 55 gal/yr were accumulated.
Site Dimensions: Not listed in WIDS

OPERABLE UNIT 300-FF-3

Site Name: 3713 Sign Shop Hazardous Waste Satellite Area
Aliases:
Site Description: This satellite area has been inactive since 1984.
Waste Types and Amounts: Hazardous wastes are no longer staged at this facility. The area contained miscellaneous small quantities (less than 55 gal accumulated at any one time) of waste solutions (nonslovents) from sign shop operations. Less than 55 gal/yr were accumulated.
Site Dimensions:

Site Name: 3718-F Burn Shed
Aliases:
Site Description: This test treatment or support facility has been inactive since September 1968.
Waste Types and Amounts: Wastes consisted of sodium, lithium and sodium-potassium alloys. Small quantities of reactive laboratory wastes were also capable of being treated at this facility.
Site Dimensions: Not listed in WIDS

Site Name: 3718-F Storage Facility
Aliases: 3718-F Alkali Metal Treatment Facility
Site Description: Part of the 3718-F Alkali Metal Treatment Facility used for the treatment and storage of materials contaminated with alkali metal wastes.
Waste Types and Amounts: Hazardous wastes are no longer stored at this facility. The wastes consisted of sodium, lithium, and sodium alloys. Small quantities of reactive laboratory wastes were also capable of being treated at this facility.
Site Dimensions: Not listed in WIDS

Site Name: 3718-F Treatment Tank
Aliases:
Site Description: This storage tank is part of the 3718-F Alkali Metal Treatment Facility used for the treatment and storage of materials contaminated with alkali metal wastes.
Waste Types and Amounts: Wastes consisted of sodium, lithium, sodium-potassium alloys, and small quantities of reactive laboratory wastes.
Site Dimensions: Not listed in WIDS

Site Name: 3718-F Treatment Tank 2
Aliases:
Site Description: This storage tank is part of the 3718-F Alkali Metal Treatment Facility used for the treatment and storage of materials contaminated with alkali metal wastes.
Waste Types and Amounts: Wastes consisted of sodium, lithium, sodium-potassium alloys, and small quantities of reactive laboratory wastes.
Site Dimensions: Not listed in WIDS

OPERABLE UNIT 300-FF-3

Site Name: 3746-D Silver Recovery
Aliases: 3746-D Silver Recovery Process
Site Description: This test treatment or support facility has been active since 1967.
Waste Types and Amounts: Corrosive silver containing waste photochemicals (1.530 gal/yr) are processed for reclaimation of silver (1119.19 troy oz/yr).
Site Dimensions: Not listed in WIDS

Site Name: Biological Treatment Test Facilities
Aliases:
Site Description: This test treatment or support facility has been active since January 1988. These technologies treat RMW and hazardous waste constituents in soil, effluents, and groundwater through the use of microorganisms.
Waste Types and Amounts: Wastes include listed waste, waste from nonspecific sources, characteristic wastes, and state-only wastes.
Site Dimensions: Not listed in WIDS

Site Name: Physical and Chemical Treatment Test Facilities
Aliases:
Site Description: This test treatment or support facility has been active since January 1979. The treatment of RMW and hazardous waste via various physical and chemical treatment R & D processes. The primary processes are grout treatment and distillation.
Waste Types and Amounts: Wastes included listed wastes, wastes from nonspecific sources, characteristic wastes, and state-only wastes.
Site Dimensions: Not listed in WIDS

Site Name: Thermal Treatment Test Facilities
Aliases:
Site Description: This test treatment or support facility has been active since January 1978. The treatment of RMW and hazardous wastes via various thermal treatment R 7 D processes. The primary processes are in situ vitrification and waste vitrification.
Waste Types and Amounts: Wastes included listed wastes, wastes from nonspecific sources, characteristic wastes, and state-only wastes.
Site Dimensions: Not listed in WIDS

OPERABLE UNIT 300-FF-4

Site Name:	400 Area French Drain 1A
Aliases:	French Drain Number 1A
Site Description:	This French Drain has been active since 1979. The unit consists of a concrete or vitrified clay pipe filled with gravel. The pipe is a minimum of 5 ft in length and discharges into a gravel-filled drainage area.
Waste Types and Amounts:	The unit receives 1.6 L/h of water condensate from building air cooling systems and janitorial solutions (water and detergents).
Site Dimensions:	4 ft (diameter)
Site Name:	400 Area French Drain 1B
Aliases:	French Drain Number 1B
Site Description:	The French Drain has been active since 1979. The unit consists of a concrete or vitrified clay pipe filled with gravel. The pipe is a minimum of 5 ft in length and discharges into a gravel-filled drainage area.
Waste Types and Amounts:	The unit receives 0.6 L/h of water condensate from building air cooling systems and janitorial solutions (water and detergents).
Site Dimensions:	4 ft (diameter)
Site Name:	400 Area French Drain 2
Aliases:	French Drain Number 2
Site Description:	The French Drain has been active since 1979. The unit consists of a concrete or vitrified clay pipe filled with gravel. The pipe is a minimum of 5 ft in length and discharges into a gravel-filled drainage area.
Waste Types and Amounts:	The unit receives 0.2 L/h of water condensate from building air cooling systems and janitorial solutions (water and detergents).
Site Dimensions:	4 ft (diameter)
Site Name:	400 Area French Drain 3
Aliases:	French Drain Number 3
Site Description:	The French Drain has been active since 1979. The unit consists of a concrete or vitrified clay pipe filled with gravel. The pipe is a minimum of 5 ft in length and discharges into a gravel-filled drainage area.
Waste Types and Amounts:	The unit receives 0.22 L/h of rain water.
Site Dimensions:	4 ft (diameter)
Site Name:	400 Area French Drain 4
Aliases:	French Drain Number 4
Site Description:	The French Drain has been active since 1979. The unit consists of a concrete or vitrified clay pipe filled with gravel. The pipe is a minimum of 5 ft in length and discharges into a gravel-filled drainage area.
Waste Types and Amounts:	The unit receives ~2,000 gal/hr of dilute sodium carbonate, condensate, and floor drain effluent.
Site Dimensions:	4 ft (diameter)

OPERABLE UNIT 300-FF-4

Site Name:	400 Area French Drain 5
Aliases:	French Drain Number 5
Site Description:	The French Drain has been active since 1979. The unit consists of a concrete or vitrified clay pipe filled with gravel. The pipe is a minimum of 5 ft in length and discharges into a gravel-filled drainage area.
Waste Types and Amounts:	The unit receives 0.22 L/h of water condensate from building air cooling systems and janitorial supplies (detergents and water), and 2% sodium carbonate solution.
Site Dimensions:	4 ft (diameter)
Site Name:	400 Area French Drain 6
Aliases:	French Drain Number 6
Site Description:	The French Drain has been active since 1979. The unit consists of a concrete or vitrified clay pipe filled with gravel. The pipe is a minimum of 5 ft in length and discharges into a gravel-filled drainage area.
Waste Types and Amounts:	The unit receives 100 gal/yr of condensate from building air cooling systems and floor drain effluent.
Site Dimensions:	4 ft (diameter)
Site Name:	400 Area French Drain 7
Aliases:	French Drain Number 7
Site Description:	The French Drain has been active since 1979. The unit consists of a concrete or vitrified clay pipe filled with gravel. The pipe is a minimum of 5 ft in length and discharges into a gravel-filled drainage area.
Waste Types and Amounts:	The unit receives 0.2 L/h of water condensate from building air cooling systems and janitorial supplies (water and detergents).
Site Dimensions:	4 ft (diameter)
Site Name:	400 Area French Drain 8
Aliases:	French Drain Number 8
Site Description:	The French Drain has been active since 1979. The unit consists of a concrete or vitrified clay pipe filled with gravel. The pipe is a minimum of 5 ft in length and discharges into a gravel-filled drainage area.
Waste Types and Amounts:	The unit receives 7 L/h of water condensate from building air cooling systems and janitorial supplies (water and detergents).
Site Dimensions:	4 ft (diameter)

OPERABLE UNIT 300-FF-4

Site Name:	400 Area French Drain 9
Aliases:	French Drain Number 9
Site Description:	The French Drain has been active since 1979. The unit consists of a concrete or vitrified clay pipe filled with gravel. The pipe is a minimum of 5 ft in length and discharges into a gravel-filled drainage area.
Waste Types and Amounts:	The unit receives 4.8 L/h of janitorial supplies (water and detergents), drinking water, and water softener wastewater.
Site Dimensions:	4 ft (diameter)

Site Name:	400 Area French Drain 10
Aliases:	French Drain Number 10
Site Description:	The French Drain has been active since 1979. The unit consists of a concrete or vitrified clay pipe filled with gravel. The pipe is a minimum of 5 ft in length and discharges into a gravel-filled drainage area.
Waste Types and Amounts:	The unit receives 0.43 L/h of water from leaking valves, etc. in the 482A and 482E Water Storage Tank buildings.
Site Dimensions:	4 ft (diameter)

Site Name:	400 Area French Drain 10A
Aliases:	French Drain Number 10A
Site Description:	The French Drain has been active since 1979. The unit consists of a concrete or vitrified clay pipe filled with gravel. The pipe is a minimum of 5 ft in length and discharges into a gravel-filled drainage area.
Waste Types and Amounts:	The unit receives 0.43 L/h of water from leaking valves, etc. in the 482A and 482E Water Storage Tank buildings.
Site Dimensions:	4 ft (diameter)

Site Name:	400 Area Process Pond and Sewer System
Aliases:	No aliases.
Site Description:	The pond has been active since 1979. The unit consists of two shallow basins. The basins are used alternately.
Waste Types and Amounts:	The process sewer, which empties into the process ponds, is for discharge of water from cooling systems and nonsanitary drains and sumps in the 400 Area facilities, including the Fast Flux Test Facility (FFTF). Water from building cooling towers contains algaecides and other treatment chemicals (Endcor 4690, Dearicide 702, and Dearicide 717) in concentrations below regulatory limits. Drains and sumps collect nonhazardous leaks, spills, or rain. The flow rate to the unit is ~6M gal/yr.
Site Dimensions:	Not listed in WIDS

OPERABLE UNIT 300-FF-4

Site Name:	400 Area Retired French Drains
Aliases:	No aliases.
Site Description:	The French drains are inactive and are pre-1980.
Waste Types and Amounts:	The unit received unknown amounts of water used during construction for washing components prior to installation.
Site Dimensions:	Not listed in WIDS

Site Name:	400 Area Retired Sanitary Pond
Aliases:	No aliases.
Site Description:	The pond was active from 1972 to 1979.
Waste Types and Amounts:	The unit received 12,000 gal/d of aqueous wastes from a portable sanitary sewage treatment plant that was located adjacent to the pond. Sludges (nonhazardous) were hauled offsite for disposal during operation.
Site Dimensions:	Not listed in WIDS

Site Name:	400 Area Retired Septic Tanks
Aliases:	No aliases.
Site Description:	The septic tank operated from 1979 to 1983.
Waste Types and Amounts:	The units received unknown amounts of sanitary wastes from offices.
Site Dimensions:	Not listed in WIDS

Site Name:	400 Area Retired Septic Tanks
Aliases:	None.
Site Description:	The septic tank operated from 1979 to 1983.
Waste Types and Amounts:	The units received unknown amounts of sanitary wastes from offices.
Site Dimensions:	Not listed in WIDS

Site Name:	400 Area Sand Bottom Trench
Aliases:	400 Area Retired Sand Bottom Trench
Site Description:	The trench is inactive and is post-1980. The unit was concrete lined and connected to the process sewer.
Waste Types and Amounts:	The unit received unknown amounts of cooling tower blowdown (nonhazardous).
Site Dimensions:	Not listed in WIDS

Site Name:	400 Area Sanitary Sewer
Aliases:	None.
Site Description:	The drain field has been active since 1979.
Waste Types and Amounts:	The unit receives sanitary wastewater from offices. Flow through the system averages 15,000 gal/d.
Site Dimensions:	Not listed in WIDS

Site Name:	400 Area Sanitary Tile Field
Aliases:	None.
Site Description:	The drain field has been active since 1982.
Waste Types and Amounts:	The unit receives unknown amounts of sanitary wastes from offices.
Site Dimensions:	Not listed in WIDS

OPERABLE UNIT 300-FF-4

Site Name: 400-1
Aliases: None.
Site Description: The dumping area is active.
Waste Types and Amounts: The site contains piles of soil, concrete and rubble, and a small amount of miscellaneous materials such as traffic markers and landscape rocks. A few pieces of concrete asbestos board are present. Approximately 6 1/2 barrels of 55-gal drums cut in half are also present.
Site Dimensions: Not listed in WIDS

Site Name: 403 French Drain
Aliases: 400 Area French Drain Discharge from 403
Site Description: The French drain has been active from 1979. The unit consists of a concrete or vitrified clay pipe filled with gravel. The pipe is a minimum of 5 ft in length and discharges into a gravel-filled drainage area.
Waste Types and Amounts: The unit receives 0.043 L/h of janitorial solutions (water and detergents).
Site Dimensions: 4 ft diameter

Site Name: 427 HWSA
Aliases: 427 Building Fuel Cycle Plant Hazardous Waste Staging Area
Site Description: The satellite area has been active since 1985.
Waste Types and Amounts: The areas are used to accumulate waste, ethylene glycol and ammonium hydroxide.
Site Dimensions: Not listed in WIDS

Site Name: 437 MASF
Aliases: 437 Area Maintenance and Storage Facility
Site Description: The Test Treatment of Support Facility is inactive and was never used.
Waste Types and Amounts: The facility will be used for the maintenance and repair of equipment used in the Fast Flux Text Facility. It will also be used to treat up to 20 L/d of alkali metal wastes by removing residual sodium, which is a reactive dangerous waste, from waste materials.
Site Dimensions: Not listed in WIDS

Site Name: 4713-B French Drain
Aliases: French Drains near 4713-B, 4722-B and 4722-C
Site Description: The French Drain has been active since 1979. The unit consists of a concrete or vitrified clay pipe filled with gravel. The pipe is a minimum of 5 ft in length and discharges into a gravel-filled drainage area.
Waste Types and Amounts: The unit receives 1,000 gal/yr of wastewater from lunchroom sinks.
Site Dimensions: 4 ft (diameter)

OPERABLE UNIT 300-FF-4

Site Name: 4713-B HWSA
Aliases: 4713-B Hazardous Waste Staging Area
Site Description: The staging area has been active since 1980.
Waste Types and Amounts: The area contains primarily small quantities of oils and lubricants and some solvents.
Site Dimensions: Not listed in WIDS

Site Name: 4721 French Drain
Aliases: 400 Area French Drain Discharge from 4721 Building
Site Description: The French Drain has been active since 1979. The unit consists of a concrete or vitrified clay pipe filled with gravel. The pipe is a minimum of 5 ft in length and discharges into a gravel-filled drainage area.
Waste Types and Amounts: The unit receives 0.43 L/h of janitorial solutions (water and detergents).
Site Dimensions: 4 ft diameter.

Site Name: 4722 Paint Shop HWSA
Aliases: 4722 Paint Shop Hazardous Waste Staging Area
Site Description: The staging area has been active since 1980. Spill pans are in place under accumulation drums.
Waste Types and Amounts: The area contains primarily paint solvents.
Site Dimensions: Not listed in WIDS

Site Name: 4722-B French Drain
Aliases: French Drains near 4173-B, 4722-B, and 4722-C.
Site Description: The French Drain has been active since 1979. The unit consists of a concrete or vitrified clay pipe filled with gravel. The pipe is a minimum of 5 ft in length and discharges into a gravel-filled drainage area.
Waste Types and Amounts: The unit receives 1,000 gal/yr of wastewater from lunchroom sinks.
Site Dimensions: 4 ft diameter.

Site Name: 4722-C French Drain
Aliases: French Drains near 4173-B, 4722-B, and 4722-C, French Drain South of 4722-C.
Site Description: The French Drain has been active since 1979. The unit consists of a concrete or vitrified clay pipe filled with gravel. The pipe is a minimum of 5 ft in length and discharges into a gravel-filled drainage area.
Waste Types and Amounts: The unit receives 2,000 gal/yr of water from a sink used to wash soluble (latex) paint from hands, brushes, and rollers. The latex paints were determined to be nonhazardous. A sample from the unit was analyzed and found to contain no hazardous constituents.
Site Dimensions: 4 ft diameter.

OPERABLE UNIT 300-FF-4

Site Name:	4831 Laydown HWSA
Aliases:	4831 Laydown Hazardous Waste Staging Area
Site Description:	The staging area has been active since 1984. Wastes are stored on a concrete pad with a berm around the edge.
Waste Types and Amounts:	The area is used for staging of miscellaneous hazardous wastes produced and collected in the 400 Area, primarily oils, solvents, ethylene glycol, and empty drums for cooling water treatment chemicals (Endcor 4690, which is acutely hazardous).
Site Dimensions:	Not listed in WIDS

Site Name:	4843
Aliases:	4843 Building, 4843 Alkali Metal Storage Facility; 4843 FFTF Sodium Storage
Site Description:	The storage facility has been active since April 10, 1986. A fully insulated, bolted steel building rests on a concrete slab. Ceiling suspended heaters provide heat. Two 12-ft roll-up doors are used for moving supplies into and out of the building. Waste containers may include steel 55- and 30-gal drums and 5-gal containers.
Waste Types and Amounts:	The area is used for storage of mixed sodium waste, nonradioactive sodium waste, and materials used in cleaning up radioactive sodium, ~600 lb at any one time. The facility is used for the storage of waste alkali
Site Dimensions:	Not listed in WIDS

OPERABLE UNIT 300-IU-1

Site Name:	316-4
Aliases:	321 Cribs, 300 North Cribs, 316-N-1, 3-Crib
Site Description:	This crib was active from 1948 until 1955 or 1956. The crib consists of two units ~8 ft in diameter, 7 ft high, open bottom, 1/4 in. thick tanks, buried 10 ft below grade, resting on gravel strata. A waste influent line to the tanks starts 2 ft above the bottom of one of the tanks and extends at an angle above the tank top to grade level. A vent riser extends from the top of the same tank to 8 ft above grade. The tanks are 2 ft apart, with SS overflow pipe connecting them just below the top of each tank.
Waste Types and Amounts:	The site received hexone-bearing uranium wastes and limited amounts of other uranium-bearing wastes from the 321 buildings. Liquid containing a total of 1,230 lb of uranium were discharged to this site.
Site Dimensions:	Not listed in WIDS

Site Name:	600-1
Aliases:	
Site Description:	This dumping area was active in the spring of 1976 or 1977. The site consists of two yellow signs of a ~100 ft diameter depression. The pit where the paint was dumped has been filled with sand and is covered with sagebrush.
Waste Types and Amounts:	The site received various paints Other debris in the area includes roofing remnants, plastic 5 -gal bucket, rebar, aluminum, bits of concrete, asphalt, wood and plastic.
Site Dimensions:	Not listed in WIDS

Site Name:	600-21
Aliases:	WPPSS Window Site
Site Description:	This drain field is inactive. The site consists of a series of small parallel berms, which are approximately 18 in. tall, 3 ft wide, and 100 yd long. The berms are arranged to form a triangle approximately 150 by 100 yd long. Perimeter berms are approximately 3 ft tall.
Waste Types and Amounts:	Not listed in WIDS
Site Dimensions:	Not listed in WIDS

Site Name:	600-23
Aliases:	Gavel Pit 2 - south
Site Description:	This pit is inactive. The unit consists of a large rock pit encompassing approximately 30 acres and approximately 60 ft deep. At the west end of the site is a middle terrace. Most of the waste is located at the northern 1/2 to 3/4 portion of the terrace.
Waste Types and Amounts:	The middle terrace at the west end of the unit contains construction debris. Barrels, most of which are empty, are present at the face of the terrace. Asbestos is also present. Radiological contamination may be associated with some of the waste materials.
Site Dimensions:	Not listed in WIDS

OPERABLE UNIT 300-IU-1

Site Name:	618-10
Aliases:	300 North Solid Waste Burial Ground; 318-10
Site Description:	This burial ground was active from arch 1954 to September 1963. The site consists of 12 trenches and 94 pipe facilities. The trenches range in size from 320 ft long by 70 ft wide by 25 ft deep to 50 ft by 40 ft by 25 ft. The pipe facilities are 22 in. diameter, 15 ft long pipes made by welding together five 55 gallon drums, buried vertically. They have been backfilled and topped with concrete. The site perimeter is marked with identification markers 3-64-1 through 3-64-68, starting in the southern most corner.
Waste Types and Amounts:	The site contains a broad spectrum of low to high -level dry wastes, primarily fission products and plutonium from the 300 Area. Low-level wastes are buried in trenches, and medium to high-level beta/gamma wastes are stored in the pipe facilities.
Site Dimensions:	500 ft (l) by 500 ft (w) x 25 ft (d)
Site Name:	618-11
Aliases:	Y Burial Ground 318-11; 300 Wye Burial Ground
Site Description:	This burial ground was active from March 1962 to December 1967. The site is composed of three trenches, 54 pipe storage units, and 8 to 10 caissons. The trenches are 900 ft long by 50 ft wide (surface dimensions). The pipe storage units are 22 in. in diameter by 15 ft long, buried vertically, and made by welding five 55-gal drums together. The caissons are 8 ft diameter corrugated metal pipe, 10 ft long, buried 15 ft below grade, connected to the surface by a offset 36 in. diameter pipe with a dome cap. The site perimeter is marked with identification markers 2-68-1 through 2-68-28.
Waste Types and Amounts:	The site contains a broad spectrum of low to high-level dry wastes, primarily fission products and plutonium. Low-level wastes were buried in trenches, and high-level wastes were buried in the pipe storage units and caissons.
Site Dimensions:	1,000 ft (l) x 375 ft (w) x 15 ft (d)
Site Name:	JA Jones 1
Aliases:	
Site Description:	This landfill was active from 1975 to 1979.
Waste Types and Amounts:	The site contains miscellaneous nonradioactive solid wastes from various construction sites. It contains wood scraps, concrete, and miscellaneous construction wastes.
Site Dimensions:	100 ft (l) x 50 ft (w) x 10 ft (d)

OPERABLE UNIT 300-IU-1

Site Name: UPR-600-1
Aliases: UN-600-1
Site Description: Occurred on July 4, 1961.
Waste Types and Amounts: Readings over 100,000 ct/min for most particles, with up to 20 particles per 100 ft^2 at a distance of 50 to 75 ft from the burial ground fence and extending out for 100 yd. At 300 yd outside the fence, 3 particles per 100 ft^2 were detected, ranging from 4,000 to 20,000 ct/min.
Site Dimensions: Not listed in WIDS

Site Name: UPR-600-2
Aliases: UN-600-2
Site Description: Occurred on February 14, 1963.
Waste Types and Amounts: Airborne contamination resulting in readings to 80,000 ct/min
Site Dimensions: Not listed in WIDS

Site Name: UPR-600-3
Aliases:
Site Description: Occurred on September 4, 1963.
Waste Types and Amounts: Readings to 400 mR/h at 2 in.
Site Dimensions: Not listed in WIDS

Site Name: UPR-600-4
Aliases:
Site Description: Occurred on March 6, 1964.
Waste Types and Amounts: Waste from the High-level Radiochemistry Facility. Readings were up to 10,000 ct/min.
Site Dimensions: Not listed in WIDS

Site Name: UPR-600-5
Aliases:
Site Description: Occurred on May 18, 1964.
Waste Types and Amounts: Airborne contamination resulting in readings to 500 ct/min of beta/gamma of gross fission products.
Site Dimensions: Area = 1,800 ft^2

Site Name: UPR-600-6
Aliases:
Site Description: Occurred on February 8, 1965.
Waste Types and Amounts: Ru-103 and Zr-Nb95 with readings from 100 ct/min to 200 mR/h
Site Dimensions: Area = 1,400 ft^2

Site Name: UPR-600-7
Aliases:
Site Description: Occurred on March 1, 1965.
Waste Types and Amounts: Not listed in WIDS
Site Dimensions: Not listed in WIDS

OPERABLE UNIT 300-IU-1

Site Name: UPR-600-8
Aliases:
Site Description: Occurred on April 7, 1967.
Waste Types and Amounts: Airborne contamination resulting in readings to 100,000 ct/min.
Site Dimensions: Area = 30 ft^2

Site Name: UPR-600-9
Aliases:
Site Description: Occurred on April 14, 1967
Waste Types and Amounts: Corroded aluminum rupture cans and pieces of an N Reactor safety rod. Readings were up to 450 mR/h at the chute.
Site Dimensions: 750 ft (l) x 450 ft (w)

Site Name: UPR-600-10
Aliases:
Site Description: Occurred on September 30, 1963.
Waste Types and Amounts: Airborne contamination resulting in readings to 1/4 R/h at 3 in. of high-level beta/gamma.
Site Dimensions: Not listed in WIDS

Site Name: UPR-600-11
Aliases:
Site Description: Occurred on May 29, 1980.
Waste Types and Amounts: Beta/gamma with readings to 4,000 ct/min in the dirt.
Site Dimensions: Not listed in WIDS

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APPENDIX B

SUMMARY CONSTITUENT TABLES

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INTRODUCTION

The scope of this project included reviewing and summarizing the analytical data from the field investigations for operable units 100-BC-1, 100-DR-1, 100-HR-1, 100-NR-1, and 300-FF-1. The field investigation consisted of borehole sampling for numerous waste sites within each operable unit The samples from the boreholes were analyzed in laboratories for inorganic, organic, and radionuclide constituents.

The complete laboratory analysis for operable units 100-BC-1 and 100-HR-1 are listed in the respective limited field investigation (LFI) reports for the operable units, (DOE/RL 1993b) and (DOE/RL 1993d). The LFI report for operable unit 100-DR-1 (DOE/RL 1993c) does not contain a complete listing of the laboratory analysis for the borehole sampling. The complete results for this operable unit were obtained from the *Data Validation Report for 100-DR-1 Operable Unit Vadose Sampling*, (WHC 1992). The complete laboratory analysis for the 300-FF-1 is listed in the *Phase I Remedial Investigation Report for 300-FF-1 Operable Unit* (DOE-RL 1993f). The data from ITC summarized the laboratory analysis for operable unit 100-NR-1.

The results from the laboratory analysis are summarized in this appendix in constituent summary tables. The constituent summary tables show the detected concentration of either inorganic, organic, or radionuclide constituents by depth for each of the sampled waste sites.

The constituent summary tables for the inorganic, organic, and radionuclide constituents are listed separately in sections B-1, B-2, and B-3, respectively. Within each section, there are separate tables for each of the five operable units. Due to the large number of constituents and number of waste sites in each operable units, the constituent summary tables are listed on multiple pages.

The constituent summary tables show all detected constituents horizontally across the top of the table and the depths are listed vertically along the edge of the table.

Within each of the sections (inorganic, organic, or radionuclide), the summary tables for each of the operable units do not necessarily have the same constituents listed in the headers of the tables. Each of the operable units was reviewed independently to determine the appropriate constituents to include in the respective headers. For the inorganic summary tables, any constant that was detected above the Hanford Background 95 percent Upper Threshold Limit (UTL), in at least one site in a operable unit, was included in the header for that operable unit's summary table. For the organic and the radionuclide summary tables, any constituent that was detected, regardless of amount, in at least one waste site in a operable unit, was included in the header for that operable unit's summary table.

Each waste site in the constituent summary tables has a different depth scale. The tables have been set up with either a 2.5 or 5.0 feet (ft) depth increment . The value of the increment depended on the borehole analysis for the waste site. For waste sites that had borehole sampling at smaller increments, the constituent summary tables have been set up with 2.5 ft increments. The other waste sites have 5.0 ft increments. The maximum depth of each table was determined by the depth of the borehole sampling. In many cases, the borehole sampling began at 10 ft. For these waste sites, the constituent table lists no sampling for a 0.0 to 10.0 ft increment.

The laboratory results list the detected concentrations of each constituent based on the sampling intervals from the borehole. The borehole sampling intervals did not usually coincide with the intervals on the depth scale of the constituent summary table. In many cases the sampling intervals overlapped two intervals on the constituent summary tables. In these cases, the detected concentrations for the constituents is listed in both of the overlapped depth intervals. This procedure produces a larger band for the constituent in the table than actual exists. For example, the laboratory results may list a detected constituent at a specific concentration between 14.5 to 16.5 ft. The constituent summary tables lists intervals for 12.5 to 15.0 and 15.0 to 17.5 ft. The constituent would be shown in both intervals which would indicate contamination from 12.5 to 17.5 ft instead of 14.5 to 16.5 ft.

If two different samples fit into the same depth intervals in the constituent summary tables, both levels are listed for that interval. If there were more than two readings for the same depth interval, the highest and lowest readings are listed in the depth interval. One exception to this rule is when one of the readings had an (U) qualifier. The (U) qualifier indicates that no constituent was detected and the contract detection limit is listed in the laboratory results. In several cases, a value less then the contract detection limit was actually detected. In these case, the detected value is listed instead of the contract detection limit.

The average concentration has been determined for each constituent in each waste site. The average concentration was determined by first averaging the constituent concentration within the depth intervals, and then, averaging the concentration or averages for each interval in the waste site, to obtain an overall average for the site. For most waste sites, the depth intervals are not even; in these cases, the intervals were weighted to account for the differing interval depths. Any concentration that contained a (U) qualifier was assumed to be zero. Intervals that were not sampled (NS) were not factored into the average. Depth intervals that indicated that the constituent was not detected (ND) were factored into the average as zero.

All qualifiers in the laboratory report have been added to the constituent summary tables. The qualifiers are listed and explained below.

B	Analyte was detected in the sample and in the blank associated with the sample
D	Analysis was performed on diluted sample
E	Analyzed for and detected at a concentration outside the calibration range of the instrument. All results flagged with an "E" are estimates which may contain significant error.
J	Analyzed for and detected, however the associated value is considered to be an estimate due to identified QC deficiencies
M	Concentration determined by the Method of Standard Additions (MSA)
ND	Not Detected
NR	Not Reported
NS	Not Sampled

R	Indicates that the data was rejected during validation by the independent contractor because of QA problems or for administrative reasons.
RA	Contaminants were eliminated from 300-FF-1 investigation based on evaluation from risk based screening
S	Spiked sample recovery not within control limits
SNL	Sample not listed in data validation report for 100-DR-1
U	Analyzed for and not detected. The value reported is the contract required detection limit or the contract required quantitation limit.
UJ	Analyzed for and not detected. however the associated detection limit is considered to be an estimated value due to identified QC deficiencies
W	Post-digestion spike is out of control limits, while sample absorbence is less than 50% of spike absorbance.
X	Value entered by hand

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APPENDIX B-1

SUMMARY CONSTITUENT TABLES FOR INORGANIC CONSTITUENTS

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Summary of Investigation for 100-BC-1 Operable Unit - Inorganic Constituents

Site Identification with depth (ft) of sample collection	Barium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Iron (mg/kg)	Lead (mg/kg)	Manganese (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)
HANFORD SITE 95% UTL	171.0 (mg/kg)	27.9 (mg/kg)	28.2 (mg/kg)	39160.0 (mg/kg)	14.75 (mg/kg)	612.0 (mg/kg)	1.25 (mg/kg)	25.3 (mg/kg)
116-B-1	**Liquid Waste Disposal Trench**							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	104.0	33.0	23.7	21900.0	5.8 (J)	298.0 (J)	0.10 (U)	10.1 (J)
17.5 - 20.0	64.4	6.9	23.6	27300.0	5.2 (J)	839.0 (J)	0.09 (U)	8.6 (J)
20.0 - 22.5	79.9	22.0	18.0	19100.0	5.6 (J)	262.0 (J)	0.10 (U)	24.5 (J)
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	55.10	10.20	12.30	13000.00	4.0 (J)	213.0 (J)	0.09 (U)	7.4 (J)
Average	75.9	18.0	19.4	20325.0	5.2	403.0	0.0	12.7
116-B-2	Fuel Storage Basin Trench							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	82.2	20.2	17.4	20000.0	4.9 (J)	292.0	0.09 (U)	9.0 (J)
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	71.1	6.4	20.2	24600.0	2.90 (UJ)	305.0	0.10 (U)	9.5 (J)
20.0 - 22.5	76.6 - 91.6	6.8 - 6.9	25.7 - 27.8	27800.0 - 30100.0	3.10 (UJ) - 3.30 (UJ)	334.0 - 367.0	0.09 (UJ)	9.3 - 9.4
Average	79.1	11.2	21.5	24516.7	1.6	315.8	0.0	9.3
116-B-3	Pluto Crib							
0.0 - 10.0	133.00	10.8 (J)	16.40	21300.00	4.9 (J)	301.0 (J)	0.10 (U)	8.00
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	65.8 - 56.6	5.1 - 7.2 (J)	14.0 - 17.6	20200.0 - 23400.0	2.10 (UJ) - 3.20 (UJ)	330.0 - 367.0 (J)	0.05 (U) - 0.10 (U)	7.9 - 9.6
15.0 - 17.5	59.6	44.5 (J)	17.4	23400.0	2.9 (U)	290.0 (J)	0.10 (U)	8.5
Average	108.8	15.6	16.5	21733.3	3.3	307.1	0.0	8.2
116-B-5	Crib							
0.0 - 10.0	90.2	12.6	17.2	18500.0	3.8	315.0 (J)	1.4	9.6
10.0 - 12.5	484.0	19.6	26.8	17500.0	7.0	301.0	1.1 (J)	8.4
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	78.6	6.9	26.1	22500.0	2.5 (U)	291.0	2.9 (J)	6.1
Average	153.9	12.8	20.3	19000.0	3.7	308.7	1.6	8.8

Summary of Investigation for 100-BC-1 Operable Unit - Inorganic Constituents

Site Identification with depth (ft) of sample collection	Silver (mg/kg)	Zinc (mg/kg)	Comments
HANFORD SITE 95% UTL	2.7 (mg/kg)	79.0 (mg/kg)	
116-B-1	Liquid Waste Disposal Trench		
0.0 - 10.0	NS	NS	
10.0 - 12.5	NS	NS	
12.5 - 15.0	NS	NS	
15.0 - 17.5	0.42 (U)	128.0	
17.5 - 20.0	0.39 (U)	51.0	
20.0 - 22.5	0.39 (U)	53.9	
22.5 - 25.0	NS	NS	
25.0 - 27.5	0.39 (U)	33.60	
Average	0.0	66.6	
116-B-2	Fuel Storage Basin Trench		
0.0 - 10.0	NS	NS	
10.0 - 12.5	0.40 (U)	60.0	
12.5 - 15.0	NS	NS	
15.0 - 17.5	NS	NS	
17.5 - 20.0	0.42 (U)	45.5	
20.0 - 22.5	0.40 (UJ) - 0.42 (UJ)	58.4 - 59.3	
Average	0.0	54.8	
116-B-3	Pluto Crib		
0.0 - 10.0	0.40 (UJ)	46.60	
10.0 - 12.5	NS	NS	
12.5 - 15.0	0.42 (UJ) - 3.0	35.7 - 45.8	
15.0 - 17.5	0.65 (U)	36.5	
Average	0.3	43.9	
116-B-5	Crib		
0.0 - 10.0	0.57 (U)	68.4	
10.0 - 12.5	0.62 (U)	69.4	
12.5 - 15.0	NS	NS	
15.0 - 17.5	0.60 (U)	125.0	
Average	0.0	78.0	

Summary of Investigation for 100-BC-1 Operable Unit - Inorganic Constituents

Site Identification with depth (ft) of sample collection	Barium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Iron (mg/kg)	Lead (mg/kg)	Manganese (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)
116-C-5	**Retention Basin - Test Pit (in area contaminated by leakage from west basin)**							
0.0 - 10.0	81.8 - 260.0	12.0 - 15.10	15.2 - 16.6	17100.0 - 18000.0	8.0 - 12.6	334.0	0.09 (U) - 0.15 (U)	11.5 - 12.9
10.0 - 12.5	97.6	11.8	20.6	2260.0	6.8	392.0	0.10 (U)	13.0
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	107.0 - 113.0 (J)	8.4 - 16.6	21.7 - 22.9	18300.0 (J) - 25600.0	4.7 (J) - 7.0	435.0 - 446.0 (J)	0.12 (U) - 0.14 (U)	13.9 - 16.1
Average	148.5	13.1	17.8	15735.0	9.0	361.4	0.0	12.8
116-C-5	**Retention Basin - sludge samples from inside basins**							
East Basin	66.7 (J) - 97.0	137.0 (J) - 609.0 (J)	15.2 - 46.8	23000.0 - 44600.0	129.0 (J) - 564.0 (J)	263.0 (J) - 520.0 (J)	NR - 3.4	7.4 - 24.3
West Basin	88.0 - 91.4	7.4 (J) - 270.0 (J)	8.7 - 28.1	13700.0 (J) - 40600.0	2.8 (UJ) - 180.0	242.0 (J) - 444.0 (J)	NR - 4.3	4.9 - 18.9
Average	85.8	255.9	24.7	30475.0	219.0	367.3	1.9	13.9
116-C-1	Liquid Waste Disposal Trench							
116-B-11	Retention Basin							
116-B-7	Outfall Structures							
132-6	Outfall Structures							
132-C-2	Outfall Structures							
116-B-13/14	Sludge Burial Trenches							
116-B-6A	Crib							
0.0 - 10.0	NR	NR	23.0 - 92.0	NR	16.0 - 94.0	NR	NR	NR
10.0 - 12.5	NR	NR	NR	NR	48.0	NR	NR	NR
12.5 - 15.6	NR	NR	NR	NR	NR	NR	NR	NR
15.6 - 17.5	NR	NR	NR	NR	NR	NR	NR	NR
17.5 - 20.0	NR	NR	38.0	NR	21.0	NR	NR	NR
Average	NR	NR	53.6	NR	48.2	NR	NR	NR
116-B-6B	Crib							
116-B-4	Dummy Decontamination French Drain							
116-B-9	French Drain							
116-B-10	Dry Well							
116-B-12	Crib							
118-B-5	Ball 3X Burial Ground							
118-B-7	Solid Waste Burial Ground							

Summary of Investigation for 100-BC-1 Operable Unit - Inorganic Constituents

Site Identification with depth (ft) of sample collection	Silver (mg/kg)	Zinc (mg/kg)	Comments
116-C-5	**Retention Basin**		
0.0 - 10.0	0.9 - 1.3	45.2 - 53.9	
10.0 - 12.5	1.7	55.6	
12.5 - 15.0	NS	NS	
15.0 - 17.5	NS	NS	
17.5 - 20.0	NS	NS	
20.0 - 22.5	1.7 - 1.9	46.5 (J) - 61.4	
Average	1.3	51.3	
116-C-5	**Retention Basin**		
East Basin	0.62 (U) - 1.31 (UJ)	77.9 (J) - 309.0	
West Basin	0.66 (U) - 1.23 (UJ)	23.1 (J) - 138.0	
Average	0.0	137.0	
116-C-1			No LFI Investigation
116-B-11	Retention Basin		No LFI Investigation
116-B-7	Outfall Structures		No LFI Investigation
132-6	Outfall Structures		No LFI Investigation
132-C-2	Outfall Structures		No LFI Investigation
116-B-13/14	Sludge Burial Trenches		No LFI Investigation
116-B-6A	Crib		No LFI Investigation
0.0 - 10.0	NR	1140.0 - 2500.0	
10.0 - 12.5	NR	NR	Data from PNL study in 1992
12.5 - 15.6	NR	NR	Cadmium 21 mg/kg near surface 0.92 mg/kg at 6 ft
15.6 - 17.5	NR	NR	Hanford Site 95% UTL for Cadmium is .66 mg/kg
17.5 - 20.0	NR	NR	
Average	NR	1820.0	
116-B-6B	Crib		No LFI Investigation
116-B-4	Dummy Decontamination French Drain		No LFI Investigation
116-B-9	French Drain		No LFI Investigation
116-B-10	Dry Well		No LFI Investigation
116-B-12	Crib		No LFI Investigation
118-B-5	Ball 3X Burial Ground		No LFI Investigation
118-B-7	Solid Waste Burial Ground		No LFI Investigation

Summary of Investigation for 100-BC-1 Operable Unit - Inorganic Constituents

Site Identification with depth (ft) of sample collection	Barium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Iron (mg/kg)	Lead (mg/kg)	Manganese (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)
118-B-4/5	Filter Building, Gas Recirculation, Building, and Tunnels							
118-B-10	Solid Waste Burial Ground							
118-B-10	Burn Pit							
128-B-3	Burn Pit							
125-B-2	Clearwells							

Summary of Investigation for 100-BC-1 Operable Unit - Inorganic Constituents

Site Identification with depth (ft) of sample collection	Silver (mg/kg)	Zinc (mg/kg)	Comments
118-B-4/5	Filter Building, Gas Recirculation, Building, and Tur		No LFI Investigation
118-B-10	Solid Waste Burial Ground		No LFI Investigation
118-B-10	Burn Pit		No LFI Investigation
128-B-3	Burn Pit		No LFI Investigation
125-B-2	Clearwells		No LFI Investigation

Summary of Investigation for 100-DR-1 Operable Unit - Inorganic Constituents

Site Identification with depth (ft) of sample collection	Aluminum (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)
HANFORD SITE 95% UTL	15600 (mg/kg)	8.92 (mg/kg)	171.0 (mg/kg)	.66(a) (mg/kg)	27.9 (mg/kg)	19.6 (mg/kg)	28.2 (mg/kg)
116-D-1A	Trench						
0.0 - 10.0	3450.0 (J) - 3500.0 (J)	0.86 - 1.00	49.1 - 50.7	0.60 (U) - 0.61 (U)	4.5 - 4.8	8.2 - 8.7	12.6 - 14.2
10.0 - 15.0	3240.0 (J) - 3500.0 (J)	0.76 (UJ) - 1.00	48.8 - 49.1	0.53 (U) - 0.60 (U)	4.8 - 41.6	7.9 - 8.2	12.6 - 17.6
15.0 - 20.0	22.5 (J)	0.67 (U)	34.1	1.00	87.1 (J)	15.0	15.0
20.0 - 25.0	1490.0 (J)	0.70 (U)	11.9	0.52	16.2 (J)	4.6 (U)	4.4
25.0 - 30.0	1490.0 (J) - 1510.0 (J)	0.70 (U) - 0.83 (U)	11.9 - 12.3	0.52 - 0.64	16.2 (J) - 19.0 (J)	4.6 (U) - 4.8 (U)	4.4 - 5.5
30.0 - 35.0	1620.0 - 1640.0	0.84 - 1.30	25.7	0.69 (U) - 0.95	82.3 - 108.0	5.5 - 5.9	6.9 - 7.2
35.0 - 40.0	NS	NS	NS	NS	NS	NS	NS
40.0 - 45.0	1490.0 - 1820.0	0.67 - 0.83	26.1 - 46.0	0.63 (U) - 1.00	23.0 - 42.1	4.3 - 5.1	6.3 - 6.7
45.0 - 50.0	NS	NS	NS	NS	NS	NS	NS
50.0 - 55.0	2250.0 (J)	0.52	36.8	0.67	21.0	4.4	7.8
Average	2096.4	0.5	33.9	0.4	33.6	6.1	9.7
116-D-1B	Trench						
0.0 - 10.0	2930.0	1.0 (UJ)	44.0	0.60 (U)	3.9	6.6	11.4
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	3190.0	0.77	61.0	0.65 (U)	30.4	9.5	26.0
15.0 - 17.5	2620.0 - 3190.0	0.49 - 0.77	50.3 - 61.0	0.64 (U) - 0.65 (U)	17.6 - 30.4	7.1 - 9.5	17.0 - 26.0
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	NS	NS	NS	NS	NS	NS	NS
22.5 - 25.0	SNL	SNL	SNL	SNL	SNL	SNL	SNL
25.0 - 27.5	SNL	SNL	SNL	SNL	SNL	SNL	SNL
27.5 - 30.0	2510.0 (J) - 3380.0	0.48 - 1.9 (U)	64.5 - 72.7 (J)	0.64 (U) - 1.1	5.9 - 9.4	8.6 - 11.7	13.3 - 19.7
30.0 - 32.5	2510.0 (J) - 3380.0	0.48 - 1.9 (U)	64.5 - 72.7 (J)	0.64 (U) - 1.1	5.9 - 9.4	8.6 - 11.7	13.3 - 19.7
32.5 - 35.0	2160.0 (J)	0.50	59.3	0.6 (U)	2.6	7.7	9.7
35.0 - 37.5	2160.0 (J)	0.50	59.3	0.6 (U)	2.6	7.7	9.7
Average	2802.5	0.3	54.8	0.1	9.1	8.0	14.6

Summary of Investigation for 100-DR-1 Operable Unit - Inorganic Constituents

Site Identification with depth (ft) of sample collection	Iron (mg/kg)	Lead (mg/kg)	Magnesium (mg/kg)	Manganese (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Potassium (mg/kg)
HANFORD SITE 95% UTL	39160 (mg/kg)	14.75 (mg/kg)	8760 (mg/kg)	612 (mg/kg)	1.25 (mg/kg)	25.3 (mg/kg)	3120 (mg/kg)
116-D-1A	Trench						
0.0 - 10.0	14300.0 (J) - 15100.0 (J)	3.7 - 5.8	2940.0 (J) - 3210.0 (J)	219.0 (J) - 229.0 (J)	0.05 (U)	6.40 - 7.20	674.0 - 739.0
10.0 - 15.0	14300.0 (J) - 15100.0 (J)	5.8 - 14.4 (J)	2730.0 (J) - 2940.0 (J)	200.0 (J) - 229.0 (J)	0.05 (U)	7.20 - 12.40	568.0 - 674.0
15.0 - 20.0	13100.0 (J)	38.6	1440.0	110.0	0.56 (R)	8.2	166.0
20.0 - 25.0	10000.0 (J)	19.4	641.0	77.5	0.30 (R)	3.5 (U)	173.0
25.0 - 30.0	10000.0 (J) - 10100.0 (J)	19.4 - 27.6	641.0 - 971.0	77.5 - 88.9	0.30 (R) - 0.19 (R)	5.3 (U) - 3.7 (U)	160.0 - 173.0
30.0 - 35.0	12900.0 - 13500.0	36.0 - 51.9	1500.0 - 1850.0	110.0 - 114.0	0.05 (UJ) - 0.1 (J)	35.4 - 42.5	180.0 - 296.0
35.0 - 40.0	NS	NS	NS	NS	NS	NS	NS
40.0 - 45.0	12000.0 - 12900.0	32.0 - 36.0	1380.0 - 1630.0	99.3 - 117.0	0.08 (J) - 0.1 (J)	2.9 - 11.5	217.0 - 252.0
45.0 - 50.0	NS	NS	NS	NS	NS	NS	NS
50.0 - 55.0	7610.0	13.0	1370.0 (J)	94.6 (J)	0.05 (U)	8.3	463.0
Average	12278.9	21.3	1824.7	138.7	0.1	9.6	386.1
116-D-1B	Trench						
0.0 - 10.0	11700.0	2.5 (J)	2780.0	205.0	0.5 (U)	5.9	599.0
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	14400.0	22.0	3150.0	230.0	0.13 (J)	8.7	516.0
15.0 - 17.5	11500.0 - 14400.0	16.3 - 22.0	2300.0 - 3150.0	163.0 - 230.0	0.07 (J) - 0.13 (J)	4.9 - 8.7	387.0 - 516.0
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	NS	NS	NS	NS	NS	NS	NS
22.5 - 25.0	SNL	SNL	SNL	SNL	SNL	SNL	SNL
25.0 - 27.5	SNL	SNL	SNL	SNL	SNL	SNL	SNL
27.5 - 30.0	16100.0 - 23400.0	2.4 - 3.0	2890.0 (J) - 4120.0	201.0 (J) - 270.0	0.05 (U) - 0.10 (U)	5.7 - 8.1	287.0 - 355.0
30.0 - 32.5	16100.0 - 23400.0	2.4 - 3.0	2890.0 (J) - 4120.0	201.0 (J) - 270.0	0.05 (U) - 0.10 (U)	5.7 - 8.1	287.0 - 355.0
32.5 - 35.0	13900.0	1.9	2550.0 (J)	201.0 (J)	0.05 (U)	4.3	322.0
35.0 - 37.5	13900.0	1.9	2550.0 (J)	201.0 (J)	0.05 (U)	4.3	322.0
Average	14145.0	6.0	2910.5	212.0	0.0	6.2	465.0

Summary of Investigation for 100-DR-1 Operable Unit - Inorganic Constituents

Site Identification with depth (ft) of sample collection	Silver (mg/kg)	Sodium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)	Comments
HANFORD SITE 95% UTL	2.7 (mg/kg)	1290 (mg/kg)	111.0 (mg/kg)	79.0 (mg/kg)	
116-D-1A	Trench				
0.0 - 10.0	2.00 (UJ) - 2.03 (UJ)	125.0 - 152.0	23.5 - 22.7	32.8 - 39.9	
10.0 - 15.0	1.78 (UJ) - 2.00 (UJ)	152.0 - 211.0	16.7 - 22.7	35.4 - 39.9	
15.0 - 20.0	1.9	185.0	22.2	41.7	
20.0 - 25.0	1.8	206.0	26.0	20.8	
25.0 - 30.0	1.6 - 1.8	176.0 - 206.0	21.9 - 26.0	20.7 - 20.8	
30.0 - 35.0	1.76 - 1.95	191.0 - 195.0	16.1	19.1	
35.0 - 40.0	NS	NS	NS	NS	
40.0 - 45.0	1.88 - 2.08	157.0 - 174.0	9.2 - 16.1	17.6 - 24.4	
45.0 - 50.0	NS	NS	NS	NS	
50.0 - 55.0	1.98 (U)	183.0	12.1	22.5	
Average	1.0	175.8	19.9	28.5	
116-D-1B	Trench				
0.0 - 10.0	2.0 (R)	122.0	15.5	24.2	
10.0 - 12.5	NS	NS	NS	NS	
12.5 - 15.0	2.18	295.0	16.8	106.0	
15.0 - 17.5	1.89 - 2.18	293.0 - 295.0	13.5 - 16.8	78.2 - 106.0	
17.5 - 20.0	NS	NS	NS	NS	
20.0 - 22.5	NS	NS	NS	NS	
22.5 - 25.0	SNL	SNL	SNL	SNL	
25.0 - 27.5	SNL	SNL	SNL	SNL	
27.5 - 30.0	0.85 (UJ) - 2.04 (U)	157.0 - 278.0	20.7 - 51.5	32.8 - 41.8	
30.0 - 32.5	0.85 (UJ) - 2.04 (U)	157.0 - 278.0	20.7 - 51.5	32.8 - 41.8	
32.5 - 35.0	2.01	132.0	22.6	22.6	
35.0 - 37.5	2.01	132.0	22.6	22.6	
Average	1.6	177.6	21.1	41.5	

Summary of Investigation for 100-DR-1 Operable Unit - Inorganic Constituents

Site Identification with depth (ft) of sample collection	Aluminum (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)
HANFORD SITE 95% UTL	15600 (mg/kg)	8.92 (mg/kg)	171.0 (mg/kg)	.66(a) (mg/kg)	27.9 (mg/kg)	19.6 (mg/kg)	28.2 (mg/kg)
116-D-6	French Drain						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	3490.0	2.1 (UJ)	62.4 (J)	0.65	5.0	7.3	11.7
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	2780.0	1.0 (J)	44.5 (J)	0.64	3.7	5.8	10.7
Average	3135.0	0.5	53.5	0.6	4.4	6.6	11.2
116-D-7	Retention Basin						
0.0 - 10.0	4780.0	0.41 (U)	106.0	0.62 (U)	51.6	6.5	12.8
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	NS	NS	NS	NS	NS	NS	NS
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	NS	NS	NS	NS	NS	NS	NS
27.5 - 30.0	5020.0 (J)	1.2	62.6	0.42 (U)	34.9 (J)	5.7 (U)	10.0
30.0 - 32.5	5020.0 (J)	1.2	62.6	0.42 (U)	34.9 (J)	5.7 (U)	10.0
32.5 - 35.0	2860.0 (J)	1.1	27.1	0.38 (U)	20.4 (UJ)	2.3 (U)	13.1
35.0 - 37.5	2860.0 (J)	1.1	27.1	0.38 (U)	20.4 (UJ)	2.3 (U)	13.1
Average	4360.0	0.6	75.4	0.0	34.5	3.3	12.2

Summary of Investigation for 100-DR-1 Operable Unit - Inorganic Constituents

Site Identification with depth (ft) of sample collection	Iron (mg/kg)	Lead (mg/kg)	Magnesium (mg/kg)	Manganese (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Potassium (mg/kg)
HANFORD SITE 95% UTL	39160 (mg/kg)	14.75 (mg/kg)	8760 (mg/kg)	612 (mg/kg)	1.25 (mg/kg)	25.3 (mg/kg)	3120 (mg/kg)
116-D-6	French Drain						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	10400.0	3.2	2720.0	238.0 (J)	0.05 (U)	7.8	743.0
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	10100.0	2.2	2360.0	179.0 (J)	0.05 (U)	5.1	651.0
Average	10250.0	2.7	2540.0	208.5	0.0	6.5	697.0
116-D-7	Retention Basin						
0.0- 10.0	11400.0	3.8	2960.0	179.0	0.07 (U)	3.9 (U)	226.0
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	NS	NS	NS	NS	NS	NS	NS
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	NS	NS	NS	NS	NS	NS	NS
27.5 - 30.0	12300.0 (J)	3.5	3720.0 (J)	195.0 (J)	0.05 (U)	6.6	572.0 (U)
30.0 - 32.5	12300.0 (J)	3.5	3720.0 (J)	195.0 (J)	0.05 (U)	6.6	572.0 (U)
32.5 - 35.0	6050.0 (J)	3.8	2080.0 (J)	121.0 (J)	0.05 (U)	4.5	284.0 (U)
35.0 - 37.5	6050.0 (J)	3.8	2080.0 (J)	121.0 (J)	0.05 (U)	4.5	284.0 (U)
Average	10287.5	3.7	2930.0	168.5	0.0	2.8	113.0

Summary of Investigation for 100-DR-1 Operable Unit - Inorganic Constituents

Site Identification with depth (ft) of sample collection	Silver (mg/kg)	Sodium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)	Comments
HANFORD SITE 95% UTL	2.7 (mg/kg)	1290 (mg/kg)	111.0 (mg/kg)	79.0 (mg/kg)	
116-D-6	French Drain				
0.0 - 10.0	NS	NS	NS	NS	
10.0 - 12.5	NS	NS	NS	NS	
12.5 - 15.0	NS	NS	NS	NS	
15.0 - 17.5	0.87 (U)	139.0	14.7	27.6	
17.5 - 20.0	NS	NS	NS	NS	
20.0 - 22.5	0.90 (U)	157.0	11.6	21.2	
Average	0.0	148.0	13.2	24.4	
116-D-7	Retention Basin				
0.0 - 10.0	0.88 (U)	142.0	11.5	21.4	
10.0 - 12.5	NS	NS	NS	NS	
12.5 - 15.0	NS	NS	NS	NS	
15.0 - 17.5	NS	NS	NS	NS	
17.5 - 20.0	NS	NS	NS	NS	
20.0 - 22.5	NS	NS	NS	NS	
22.5 - 25.0	NS	NS	NS	NS	
25.0 - 27.5	NS	NS	NS	NS	
27.5 - 30.0	0.85 (U)	135.0 (U)	23.6	29.3	
30.0 - 32.5	0.50 (U)	135.0 (U)	23.6	29.3	
32.5 - 35.0	0.76 (U)	122.0 (U)	10.2	14.7	
35.0 - 37.5	0.76 (U)	122.0 (U)	10.2	14.7	
Average	0.0	71.0	14.2	21.7	

Summary of Investigation for 100-DR-1 Operable Unit - Inorganic Constituents

Site Identification with depth (ft) of sample collection	Aluminum (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)
HANFORD SITE 95% UTL	15600 (mg/kg)	8.92 (mg/kg)	171.0 (mg/kg)	.66(a) (mg/kg)	27.9 (mg/kg)	19.6 (mg/kg)	28.2 (mg/kg)
116-DR-9	**Process Effluent Retention Basin**						
0.0 - 5.0	2630.0 - 6130.0	0.42 - 0.96	40.8 (J) - 106.0	0.63 (U) - 0.68 (J)	3.4 - 30.0	7.2 (J) - 12.4	7.6 - 19.3 (J)
5.0 - 10.0	2390.0 - 5270.0	0.42 - 12.4 (R)	41.5 (J) - 106.0	0.60 - 0.64 (U)	3.9 (UJ) - 30.0	7.6 - 8.1	8.2 - 19.3 (J)
10.0 - 12.5	2250.0 - 2390.0	0.4 (R) - 0.45	41.5 - 46.3	0.60 - 0.62 (U)	3.9 (UJ) - 73.4 (J)	6.6 - 7.6	11.1 (J) - 11.9
12.5 - 15.0	2380.0 (J)	0.42 (U)	43.2	0.62 (U)	3.0	6.9	10.8
15.0 - 17.5	2380.0 (J)	0.42 (U)	43.2	0.62 (U)	3.0	6.9	10.8
17.5 - 20.0	4370.0 (J)	0.99 (J)	55.9	0.71 (U)	8.0	6.9	13.1
20.0 - 22.5	4370.0 (J)	0.99 (J)	55.9	0.71 (U)	8.0	6.9	13.1
22.5 - 25.0	4310.0 (J) - 4360.0 (J)	0.91 (J) - 1.1 (J)	57.3 - 62.6	0.64 (U)	7.3 - 7.9	5.7 - 6.1	11.7 - 12.4
25.0 - 27.5	4310.0 (J) - 4360.0 (J)	0.91 (J) - 1.1 (J)	57.3 - 62.6	0.64 (U)	7.3 - 7.9	5.7 - 6.1	11.7 - 12.4
27.5 - 30.0	2350.0 (J) - 2520.0	0.41 (U) - 1.3 (J)	36.6 - 52.8	0.62 (U)	2.7 - 6.0 (J)	4.1 - 7.1	8.2 - 11.2
30.0 - 32.5	2350.0 (J) - 3640.0	0.41 (U) - 1.3 (J)	36.3 - 58.6	0.62 (U) - 1.1	2.7 - 13.3	4.1 - 7.1	8.2 - 11.2
32.5 - 35.0	2100.0 - 5620.0	1.0 (J) - 3.0	31.6 - 58.6	0.62 (U) - 1.2	6.0 (J) - 10.8	4.1 - 80.6	7.0 - 24.2
35.0 - 37.5	2100.0 - 5620.0	1.0 (J) - 3.0	31.6 - 56.2	0.62 (U) - 1.2	6.1 (J) - 10.8	7.9 - 80.6	7.0 - 24.2
Average	3604.0	1.6	55.8	0.2	11.1	12.0	12.6
116-DR-1	Trench						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	3440.0 (J)	1.10	51.3 (J)	1.5 (J)	186.0 (J)	9.5	20.6 (J)
15.0 - 17.5	3440.0 (J)	1.10	51.3 (J)	1.5 (J)	186.0 (J)	9.5	20.6 (J)
17.5 - 20.0	2790.0 (J)	0.44	71.9 (J)	0.53 (UJ)	18.0 (J)	8.8	13.2 (J)
20.0 - 22.5	2790.0 (J)	0.44	71.9 (J)	0.53 (UJ)	18.0 (J)	8.8	13.2 (J)
22.5 - 25.0	2470.0 (J) - 2480.0 (J)	0.54	46.7 - 47.0	0.58 (UJ) - 0.61 (UJ)	8.0 - 8.1	6.3 - 6.6	12.0 - 13.1
25.0 - 27.5	2470.0 (J) - 2480.0 (J)	0.54	46.7 - 47.0	0.58 (UJ) - 0.61 (UJ)	8.0 - 8.1	6.3 - 6.6	12.0 - 13.1
27.5 - 30.0	2640.0 (J)	0.76	44.8	0.59 (UJ)	7.5	6.2	11.9
30.0 - 32.5	2640.0 (J)	0.76	44.8	0.59 (UJ)	7.5	6.2	11.9
Average	2836.3	0.7	53.7	0.4	54.9	7.7	14.6

Summary of Investigation for 100-DR-1 Operable Unit - Inorganic Constituents

Site Identification with depth (ft) of sample collection	Iron (mg/kg)	Lead (mg/kg)	Magnesium (mg/kg)	Manganese (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Potassium (mg/kg)
HANFORD SITE 95% UTL	39160 (mg/kg)	14.75 (mg/kg)	8760 (mg/kg)	612 (mg/kg)	1.25 (mg/kg)	25.3 (mg/kg)	3120 (mg/kg)
116-DR-9	Process Effluent Retention Basin						
0.0 - 5.0	11400.0 - 21400.0	2.2 - 6.6 (J)	2330.0 - 3970.0	170.0 (J) - 319.0 (J)	0.05 (U)	6.4 - 7.8	280.0 - 1200.0
5.0 - 10.0	10300.0 - 15100.0	1.6 (J) - 3.4 (J)	2130.0 - 3200.0	158.0 - 266.0	0.05	4.9 - 37.0 (J)	262.0 - 636.0
10.0 - 12.5	10300.0 - 11300.0	1.6 (J) - 2.4	2130.0 - 2380.0	158.0 - 169.0	0.05	4.9 - 37.0 (J)	333.0 - 352.0
12.5 - 15.0	10500.0 (J)	1.6	2300.0 (J)	177.0 (J)	0.05 (U)	5.0	277.0
15.0 - 17.5	10500.0 (J)	1.6	2330.0 (J)	177.0 (J)	0.05 (U)	5.0	277.0
17.5 - 20.0	12000.0 (J)	3.0	3500.0 (J)	215.0 (J)	0.06 (U)	10.2	752.0
20.0 - 22.5	12000.0 (J)	3.0	3500.0 (J)	215.0 (J)	0.06 (U)	10.2	752.0
22.5 - 25.0	9590.0 (J) - 10300.0 (J)	2.9 - 3.0	3240.0 (J) - 3560.0 (J)	227.0 (J) - 257.0 (J)	0.05 (U)	8.9 - 11.1	685.0 - 795.0
25.0 - 27.5	9290.0 (J) - 10300.0 (J)	2.9 - 3.0	3240.0 (J) - 3560.0 (J)	227.0 (J) - 257.0 (J)	0.05 (U)	8.9 - 11.1	685.0 - 795.0
27.5 - 30.0	7160.0 - 11700.0 (J)	1.8 - 2.5	2240.0 - 2520.0 (J)	156.0 - 187.0 (J)	0.05 (U)	6.2 - 7.5	294.0 - 638.0
30.0 - 32.5	7160.0 - 11700.0 (J)	1.8 - 2.9 (J)	2240.0 - 2810.0	156.0 - 187.0 (J)	0.05 (U)	6.2 - 7.5	294.0 - 638.0
32.5 - 35.0	6860.0 - 15800.0	2.5 - 3.4	1820.0 - 4710.0	112.0 - 302.0 (J)	0.05 (U) - 0.08	6.0 - 11.7	349.0 - 825.0
35.0 - 37.5	6860.0 - 15800.0	2.6 - 3.4	1820.0 - 4710.0	112.0 - 302.0 (J)	0.05 (U) - 0.08	6.0 - 11.7	349.0 - 825.0
Average	11684.0	2.8	2916.7	206.8	0.0	10.6	557.6
116-DR-1	Trench						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	15100.0 (J)	4.0 (J)	3400.0	223.0 (J)	0.23 (J)	10.0	569.0 (U)
15.0 - 17.5	15100.0 (J)	4.0 (J)	3400.0	223.0 (J)	0.23 (J)	10.0	569.0 (U)
17.5 - 20.0	15200.0 (J)	1.8 (J)	2880.0	199.0 (J)	0.05 (UJ)	7.6	201.0 (U)
20.0 - 22.5	15200.0 (J)	1.8 (J)	2880.0	199.0 (J)	0.05 (UJ)	7.6	201.0 (U)
22.5 - 25.0	10700.0 (J) - 11300.0 (J)	1.8	2360.0 - 2430.0	161.0 - 165.0 (J)	0.05 (U)	5.5 - 5.8	3.2 - 230.0
25.0 - 27.5	10700.0 (J) - 11300.0 (J)	1.8	2360.0 - 2430.0	161.0 - 165.0 (J)	0.05 (U)	5.5 - 5.8	3.2 - 230.0
27.5 - 30.0	11000.0 (J)	1.8	2600.0	160.0 (J)	0.05 (U)	7.9	275.0
30.0 - 32.5	11000.0 (J)	1.8	2600.0	160.0 (J)	0.05 (U)	7.9	275.0
Average	13075.0	2.4	2818.8	186.3	0.1	7.8	97.9

Summary of Investigation for 100-DR-1 Operable Unit - Inorganic Constituents

Site Identification with depth (ft) of sample collection	Silver (mg/kg)	Sodium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)	Comments
HANFORD SITE 95% UTL	2.7 (mg/kg)	1290 (mg/kg)	111.0 (mg/kg)	79.0 (mg/kg)	
116-DR-9	Process Effluent Retention Basin				
0.0 - 5.0	1.7 (J) - 2.0 (U)	135.0 (U) - 297.0	16.1 - 47.4	22.3 - 51.2 (J)	
5.0 - 10.0	1.6 - 2.1 (U)	128.0 (U) - 292.0	15.8 (UJ) - 22.2	20.3 (UJ) - 51.2 (J)	
10.0 - 12.5	1.0 (J) - 1.7 (J)	128.0 (U) - 131.0 (U)	11.2 (U) - 15.8 (UJ)	20.3 (UJ) - 22.2	
12.5 - 15.0	0.98	133.0 (U)	13.3	20.2	
15.0 - 17.5	0.98	133.0 (U)	13.3	20.2	
17.5 - 20.0	1.1	151.0 (U)	16.9	26.9	
20.0 - 22.5	1.1	151.0 (U)	16.9	26.9	
22.5 - 25.0	0.85 (U)	136.0 (U)	14.7 - 15.0	22.7 - 24.1	
25.0 - 27.5	0.85 (U)	136.0 (U)	14.7 - 15.0	22.7 - 24.1	
27.5 - 30.0	0.82 (U) - 0.88	131.0 (U)	9.2 - 13.3	9.3 - 19.7	
30.0 - 32.5	0.82 (U) - 0.88	131.0 (U)	9.2 - 16.6	9.3 - 22.4	
32.5 - 35.0	0.42 (U) - 0.83 (U)	130.0 (U) - 149.0	9.2 - 34.8	9.3 - 35.4	
35.0 - 37.5	0.42 (U) - 0.83 (U)	130.0 (U) - 149.0	9.4 - 34.8	14.0 - 35.4	
Average	0.6	49.2	16.3	23.6	
116-DR-1	Trench				
0.0 - 10.0	NS	NS	NS	NS	
10.0 - 12.5	NS	NS	NS	NS	
12.5 - 15.0	3.5 (R)	333.0 (J)	27.9 (J)	109.0 (J)	
15.0 - 17.5	3.5 (R)	333.0 (J)	27.9 (J)	109.0 (J)	
17.5 - 20.0	3.3 (R)	248.0 (J)	27.9 (J)	32.4 (J)	
20.0 - 22.5	3.3 (R)	248.0 (J)	27.9 (J)	32.4 (J)	
22.5 - 25.0	1.93 (R) - 2.3 (R)	121.0 - 132.0	16.4 - 17.3	22.4 - 22.5	
25.0 - 27.5	1.93 (R) - 2.3 (R)	121.0 - 132.0	16.4 - 17.3	22.4 - 22.5	
27.5 - 30.0	1.98 (R)	134.0	17.8	21.6	
30.0 - 32.5	1.98 (R)	134.0	17.8	21.6	
Average	2.7	210.4	22.6	46.4	

Summary of Investigation for 100-DR-1 Operable Unit - Inorganic Constituents

Site Identification with depth (ft) of sample collection	Aluminum (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)
HANFORD SITE 95% UTL	15600 (mg/kg)	8.92 (mg/kg)	171.0 (mg/kg)	66(a) (mg/kg)	27.9 (mg/kg)	19.6 (mg/kg)	28.2 (mg/kg)
116-DR-2	Trench						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	3180.0 (J)	0.42 (U)	60.7 (J)	1.1 (J)	11.7 (J)	9.9	14.4 (J)
15.0 - 17.5	1800.0 (J)	0.42 (U)	60.7 (J)	1.1 (J)	11.7 (J)	9.9	14.4 (J)
17.5 - 20.0	2350.0 (J)	0.34 (U)	42.6 (J)	0.56 (UJ)	7.3 (J)	6.4	9.7 (J)
20.0 - 22.5	2350.0 (J)	0.34 (U)	42.6 (J)	0.56 (UJ)	7.3 (J)	6.4	9.7 (J)
22.5 - 25.0	2950.0 - 4780.0	0.49 - 1.2 (UJ)	59.6 - 66.6	0.59 (U)	11.0 - 11.5	7.5 - 9.5	13.3 - 17.0
25.0 - 27.5	2950.0 - 4780.0	0.49 - 1.2 (UJ)	59.6 - 66.6	0.59 (U)	11.0 - 11.5	7.5 - 9.5	13.3 - 17.0
27.5 - 30.0	NS	NS	NS	NS	NS	NS	NS
30.0 - 32.5	2590.0	0.49	48.5	0.58 (U)	7.7	6.2	11.6
32.5 - 35.0	NS	NS	NS	NS	NS	NS	NS
35.0 - 37.5	2800.0	0.45	55.9	0.60 (U)	5.3	7.5	13.5
Average	2850.0	0.2	54.7	0.3	9.2	7.9	13.0
116-D-2	Pluto Crib						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	349.0 (J)	0.63 (U)	53.9	0.63 (U)	14.0 (J)	11.7	13.2
12.5 - 15.0	349.0 (J)	0.63 (U)	53.9	0.63 (U)	14.0 (J)	11.7	13.2
15.0 - 17.5	3090.0 (J)	0.75 (UJ)	48.0	0.61 (U)	9.0	11.3	11.0
17.5 - 20.0	2480.0	0.43 (UJ)	51.1	0.62 (U)	3.6	7.5	12.1
Average	1567.0	0.0	51.7	0.0	10.2	10.6	12.4
116-D-9	Reactor Confinement Seal Pit Crib						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	4410.0	0.66 (J)	56.0	0.66 (U)	9.2	11.1	21.3
17.5 - 20.0	4410.0	0.66 (J)	56.0	0.66 (U)	9.2	11.1	21.3
20.0 - 22.5	NS	NS	NS	NS	NS	NS	NS
22.5 - 25.0	2280.0	0.41 (J)	49.1	0.60 (U)	2.4	7.2	11.7
25.0 - 27.5	2280.0	0.41 (J)	49.1	0.60 (U)	2.4	7.2	11.7
Average	3345.0	0.5	52.6	0.0	5.8	9.2	16.5

Summary of Investigation for 100-DR-1 Operable Unit - Inorganic Constituents

Site Identification with depth (ft) of sample collection	Iron (mg/kg)	Lead (mg/kg)	Magnesium (mg/kg)	Manganese (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Potassium (mg/kg)
HANFORD SITE 95% UTL	39160 (mg/kg)	14.75 (mg/kg)	8760 (mg/kg)	612 (mg/kg)	1.25 (mg/kg)	25.3 (mg/kg)	3120 (mg/kg)
116-DR-2	Trench						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	17400.0 (J)	2.0 (J)	3290.0	242.0 (J)	0.36 (J)	8.2	339.0 (U)
15.0 - 17.5	17400.0 (J)	2.0 (J)	3290.0	242.0 (J)	0.36 (J)	8.2	339.0 (U)
17.5 - 20.0	10800.0 (J)	1.7 (J)	2280.0	155.0 (J)	0.06 (J)	7.6	182.0 (U)
20.0 - 22.5	10800.0 (J)	1.7 (J)	2280.0	155.0 (J)	0.06 (J)	7.6	182.0 (U)
22.5 - 25.0	12900.0 - 18400.0	2.0 (J) - 2.6	2900.0 - 4090.0	198.0 - 251.0	0.05 (U) - 0.09 (UJ)	6.1 - 8.9	368.0 - 443.0
25.0 - 27.5	12900.0 - 18400.0	2.0 (J) - 2.6	2900.0 - 4090.0	198.0 - 251.0	0.05 (U) - 0.09 (UJ)	6.1 - 8.9	368.0 - 443.0
27.5 - 30.0	NS	NS	NS	NS	NS	NS	NS
30.0 - 32.5	11000.0	2.0 (J)	2800.0	174.0	0.05 (U)	6.4	168.0 (U)
32.5 - 35.0	NS	NS	NS	NS	NS	NS	NS
35.0 - 37.5	13100.0	2.0 (J)	29.0	177.0	0.05 (U)	5.6	220.0
Average	13975.0	2.0	2619.9	199.3	0.1	7.3	128.9
116-D-2	Pluto Crib						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	20400.0 (J)	1.6 (J)	3210.0	240.0 (J)	0.05 (U)	11.6	460.0
12.5 - 15.0	20400.0 (J)	1.6 (J)	3210.0	240.0 (J)	0.05 (U)	11.6	460.0
15.0 - 17.5	19700.0 (J)	1.2 (J)	3010.0 (J)	329.0 (R)	0.08 (U)	8.9	440.0
17.5 - 20.0	12100.0	1.0	2580.0	169.0	0.05 (U)	12.2 (J)	307.0
Average	18150.0	1.4	3002.5	244.5	0.0	11.1	416.8
116-D-9	Reactor Confinement Seal Pit Crib						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	17400.0	1.7	4670.0	241.0	0.06 (U)	20.9	438.0
17.5 - 20.0	17400.0	1.7	4670.0	241.0	0.06 (U)	20.9	438.0
20.0 - 22.5	NS	NS	NS	NS	NS	NS	NS
22.5 - 25.0	12800.0	1.5	2590.0	178.0	0.05 (U)	5.6	360.0
25.0 - 27.5	12800.0	1.5	2590.0	178.0	0.05 (U)	5.6	360.0
Average	15100.0	1.6	3630.0	209.5	0.0	13.3	399.0

Summary of Investigation for 100-DR-1 Operable Unit - Inorganic Constituents

Site Identification with depth (ft) of sample collection	Silver (mg/kg)	Sodium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)	Comments
HANFORD SITE 95% UTL	2.7 (mg/kg)	1290 (mg/kg)	111.0 (mg/kg)	79.0 (mg/kg)	
116-DR-2	Trench				
0.0 - 10.0	NS	NS	NS	NS	
10.0 - 12.5	NS	NS	NS	NS	
12.5 - 15.0	3.7 (R)	331.0 (J)	32.8 (J)	46.7 (J)	
15.0 - 17.5	3.7 (R)	331.0 (J)	32.8 (J)	46.7 (J)	
17.5 - 20.0	2.3 (R)	202.0 (J)	23.0 (J)	22.5 (J)	
20.0 - 22.5	2.3 (R)	202.0 (J)	23.0 (J)	22.5 (J)	
22.5 - 25.0	0.78 (U) - 2.0 (R)	149.0 - 318.0	17.5 - 42.2	25.6 - 36.0 (J)	
25.0 - 27.5	0.78 (U) - 2.0 (R)	149.0 - 318.0	17.5 - 42.2	25.6 - 36.0 (J)	
27.5 - 30.0	NS	NS	NS	NS	
30.0 - 32.5	2.0 (R)	132.0	14.3	23.5	
32.5 - 35.0	NS	NS	NS	NS	
35.0 - 37.5	2.0 (R)	125.0	17.0	25.5	
Average	2.2	223.8	25.3	31.1	
116-D-2	Pluto Crib				
0.0 - 10.0	NS	NS	NS	NS	
10.0 - 12.5	0.84 (J)	315.0	52.2	35.5	
12.5 - 15.0	0.84 (J)	315.0	52.2	35.5	
15.0 - 17.5	0.81 (R)	334.0	51.3	31.7	
17.5 - 20.0	0.82 (U)	290.0	14.1	25.7	
Average	0.6	313.5	42.5	32.1	
116-D-9	Reactor Confinement Seal Pit Crib				
0.0 - 10.0	NS	NS	NS	NS	
10.0 - 12.5	NS	NS	NS	NS	
12.5 - 15.0	NS	NS	NS	NS	
15.0 - 17.5	2.4	389.0	22.2	30.0	
17.5 - 20.0	2.4	389.0	22.2	30.0	
20.0 - 22.5	NS	NS	NS	NS	
22.5 - 25.0	1.4	159.0	19.2	25.4	
25.0 - 27.5	1.4	159.0	19.2	25.4	
Average	1.9	274.0	20.7	27.7	

Summary of Investigation for 100-DR-1 Operable Unit - Inorganic Constituents

Site Identification with depth (ft) of sample collection	Aluminum (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)
HANFORD SITE 95% UTL	15600 (mg/kg)	8.92 (mg/kg)	171.0 (mg/kg)	.66(a) (mg/kg)	27.9 (mg/kg)	19.6 (mg/kg)	28.2 (mg/kg)
132-D-3	Effluent Pumping Station						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	2380.0	0.58 (UJ)	47.2	0.63 (UJ)	2.0	6.0	10.3
20.0 - 22.5	2380.0	0.58 (UJ)	47.2	0.63 (UJ)	2.0	6.0	10.3
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	2170.0	0.43 (UJ)	56.2	0.63 (UJ)	1.3	7.1	10.9
27.5 - 30.0	NS	NS	NS	NS	NS	NS	NS
30.0 - 32.5	NS	NS	NS	NS	NS	NS	NS
32.5 - 35.0	NS	NS	NS	NS	NS	NS	NS
35.0 - 37.5	2450.0	0.69 (UJ)	56.2	0.63 (UJ)	5.2	7.3	10.5
37.5 - 40.0	2450.0	0.69 (UJ)	56.2	0.63 (UJ)	5.2	7.3	10.5
Average	2366.0	0.0	52.6	0.0	3.1	6.7	10.5
116-D-5	Outfall Structure						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	4660.0	2.0 (U)	42.7	0.62 (U)	8.5	7.5	11.1
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	3160.0	1.1 (U)	41.8	0.63 (U)	5.8	5.6	9.8
Average	3910.0	0.0	42.3	0.0	7.2	6.6	10.5

Summary of Investigation for 100-DR-1 Operable Unit - Inorganic Constituents

Site Identification with depth (ft) of sample collection	Iron (mg/kg)	Lead (mg/kg)	Magnesium (mg/kg)	Manganese (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Potassium (mg/kg)
HANFORD SITE 95% UTL	39160 (mg/kg)	14.75 (mg/kg)	8760 (mg/kg)	612 (mg/kg)	1.25 (mg/kg)	25.3 (mg/kg)	3120 (mg/kg)
132-D-3	Effluent Pumping Station						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	10100.0	1.3	2300.0	179.0	0.05 (U)	5.4 (J)	419.0
20.0 - 22.5	10100.0	1.3	2300.0	179.0	0.05 (U)	5.4 (J)	419.0
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	12300.0	1.1	2720.0	187.0	0.05 (U)	5.8 (J)	373.0
27.5 - 30.0	NS	NS	NS	NS	NS	NS	NS
30.0 - 32.5	NS	NS	NS	NS	NS	NS	NS
32.5 - 35.0	NS	NS	NS	NS	NS	NS	NS
35.0 - 37.5	13900.0	2.3	2650.0	207.0 (U)	0.05 (U)	7.2	527.0
37.5 - 40.0	13900.0	2.3	2650.0	207.0 (U)	0.05 (U)	7.2	527.0
Average	12060.0	1.7	2524.0	109.0	0.0	6.2	453.0
116-D-5	Outfall Structure						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	14100.0	3.8 (J)	3980.0	232.0 (J)	0.05 (U)	7.3	898.0
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	8690.0	2.2	2730.0	170.0 (J)	0.05 (U)	7.0	630.0
Average	11395.0	3.0	3355.0	201.0	0.0	7.2	764.0

Summary of Investigation for 100-DR-1 Operable Unit - Inorganic Constituents

Site Identification with depth (ft) of sample collection	Silver (mg/kg)	Sodium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)	Comments
HANFORD SITE 95% UTL	2.7 (mg/kg)	1290 (mg/kg)	111.0 (mg/kg)	79.0 (mg/kg)	
132-D-3	Effluent Pumping Station				
0.0 - 10.0	NS	NS	NS	NS	
10.0 - 12.5	NS	NS	NS	NS	
12.5 - 15.0	NS	NS	NS	NS	
15.0 - 17.5	NS	NS	NS	NS	
17.5 - 20.0	0.84 (U)	133.0 (U)	9.5	20.1	
20.0 - 22.5	0.84 (U)	133.0 (U)	9.5	20.1	
22.5 - 25.0	NS	NS	NS	NS	
25.0 - 27.5	0.84 (U)	140.0	12.4	23.2	
27.5 - 30.0	NS	NS	NS	NS	
30.0 - 32.5	NS	NS	NS	NS	
32.5 - 35.0	NS	NS	NS	NS	
35.0 - 37.5	1.6	200.0	16.7	26.0	
37.5 - 40.0	1.6	200.0	16.7	26.0	
Average	0.6	108.0	13.0	23.1	
116-D-5	Outfall Structure				
0.0 - 10.0	NS	NS	NS	NS	
10.0 - 12.5	NS	NS	NS	NS	
12.5 - 15.0	NS	NS	NS	NS	
15.0 - 17.5	NS	NS	NS	NS	
17.5 - 20.0	NS	NS	NS	NS	
20.0 - 22.5	1.4	186.0	26.7	28.7	
22.5 - 25.0	NS	NS	NS	NS	
25.0 - 27.5	0.83	133.0	14.1	21.6	
Average	1.1	159.5	20.4	25.2	

Summary of Investigation for 100-DR-1 Operable Unit - Inorganic Constituents

Site Identification with depth (ft) of sample collection	Aluminum (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)
HANFORD SITE 95% UTL	15600 (mg/kg)	8.92 (mg/kg)	171.0 (mg/kg)	.66(a) (mg/kg)	27.9 (mg/kg)	19.6 (mg/kg)	28.2 (mg/kg)
116-DR-5	Outfall Structure						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	2840.0 (J)	1.2	38.0	0.61 (U)	6.1	5.6	9.4
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	2940.0	1.1 (J)	40.0	0.63 (U)	11.4 (J)	5.4	10.5
Average	2890.0	1.2	39.0	0.0	8.8	5.5	10.0
116-D-3	Crib						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	2630.0 (J)	0.63	47.8	0.63	5.3	9.5	13.5
15.0 - 17.5	2630.0 (J)	0.63	47.8	0.63	5.3	9.5	13.5
17.5 - 20.0	1330.0 (J)	0.42 (U)	53.7	0.64 (U)	5.1	3.5	7.9
20.0 - 22.5	1330.0 (J)	0.42 (U)	53.7	0.64 (U)	5.1	3.5	7.9
Average	1980.0	0.3	50.8	0.3	5.2	6.5	10.7
116-D-4	Crib						
0.0 - 5.0	3690.0	1.40	61.2	0.61 (U)	4.8	8.9	13.7
5.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	3340.0	0.86	56.0	0.61 (U)	4.7	9.3	12.0
12.5 - 15.0	3800.0	0.78	63.2	0.59 (U)	14.4	11.6	15.3
15.0 - 17.5	3800.0	0.78	63.2	0.59 (U)	14.4	11.6	15.3
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	3060.0	0.50	66.4	0.59 (U)	13.6	11.5	13.0
22.5 - 25.0	3060.0	0.50	66.4	0.59 (U)	13.6	11.5	13.0
Average	3491.4	0.9	62.5	0.0	10.0	10.5	13.7

Summary of Investigation for 100-DR-1 Operable Unit - Inorganic Constituents

Site Identification with depth (ft) of sample collection	Iron (mg/kg)	Lead (mg/kg)	Magnesium (mg/kg)	Manganese (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Potassium (mg/kg)
HANFORD SITE 95% UTL	39160 (mg/kg)	14.75 (mg/kg)	8760 (mg/kg)	612 (mg/kg)	1.25 (mg/kg)	25.3 (mg/kg)	3120 (mg/kg)
116-DR-5	Outfall Structure						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	9100.0 (J)	3.0 (J)	2580.0 (J)	176.0 (J)	0.05 (U)	6.4	345.0
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	8220.0	3.1	2500.0	163.0	0.05 (U)	9.9	614.0
Average	8660.0	3.1	2540.0	169.5	0.0	8.2	479.5
116-D-3	Crib						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	16600.0	3.2	3150.0 (J)	238.0 (J)	0.05 (U)	8.2	500.0
15.0 - 17.5	16600.0	3.2	3150.0 (J)	238.0 (J)	0.05 (U)	8.2	500.0
17.5 - 20.0	5940.0	1.1	996.0	119.0	0.05 (U)	4.7	282.0
20.0 - 22.5	5940.0	1.1	996.0	119.0	0.05 (U)	4.7	282.0
Average	11270.0	2.2	2073.0	178.5	0.0	6.5	391.0
116-D-4	Crib						
0.0 - 5.0	14200.0	3.6 (J)	3450.0	264.0	0.05 (U)	8.7	907.0
5.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	16300.0	2.4 (J)	3240.0	256.0	0.05 (U)	9.3	710.0
12.5 - 15.0	19800.0	1.8 (J)	3760.0	273.0	0.05 (U)	12.1	510.0
15.0 - 17.5	19800.0	1.8 (J)	3760.0	273.0	0.05 (U)	12.1	510.0
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	19800.0	1.5 (J)	3620.0	277.0	0.05 (U)	12.1	415.0
22.5 - 25.0	19800.0	1.5 (J)	3620.0	277.0	0.05 (U)	12.1	415.0
Average	17700.0	2.3	3557.1	269.1	0.0	10.7	624.9

Summary of Investigation for 100-DR-1 Operable Unit - Inorganic Constituents

Site Identification with depth (ft) of sample collection	Silver (mg/kg)	Sodium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)	Comments
HANFORD SITE 95% UTL	2.7 (mg/kg)	1290 (mg/kg)	111.0 (mg/kg)	79.0 (mg/kg)	
116-DR-5	Outfall Structure				
0.0 - 10.0	NS	NS	NS	NS	
10.0 - 12.5	NS	NS	NS	NS	
12.5 - 15.0	NS	NS	NS	NS	
15.0 - 17.5	NS	NS	NS	NS	
17.5 - 20.0	NS	NS	NS	NS	
20.0 - 22.5	1.6	130.0 (UJ)	12.1	22.3	
22.5 - 25.0	NS	NS	NS	NS	
25.0 - 27.5	1.1	134.0 (U)	11.0	19.6	
Average	1.4	0.0	11.6	21.0	
116-D-3	Crib				
0.0 - 10.0	NS	NS	NS	NS	
10.0 - 12.5	NS	NS	NS	NS	
12.5 - 15.0	3.4	261.0	26.9	34.6	
15.0 - 17.5	3.4	261.0	26.9	34.6	
17.5 - 20.0	0.85 (U)	135.0 (U)	12.6	26.2	
20.0 - 22.5	0.85 (U)	135.0 (U)	12.6	26.2	
Average	1.7	130.5	19.8	30.4	
116-D-4	Crib				
0.0 - 5.0	2.04 (U)	138.0	23.2	29.8	
5.0 - 10.0	NS	NS	NS	NS	
10.0 - 12.5	2.03 (U)	296.0	30.4	30.4	
12.5 - 15.0	2.1	370.0	37.5	33.8	
15.0 - 17.5	2.1	370.0	37.5	33.8	
17.5 - 20.0	NS	NS	NS	NS	
20.0 - 22.5	2.00	295.0	35.5	32.7	
22.5 - 25.0	2.00	295.0	35.5	32.7	
Average	1.2	271.7	31.8	31.9	

Summary of Investigation for 100-DR-1 Operable Unit - Inorganic Constituents

Site Identification with depth (ft) of sample collection	Aluminum (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)
HANFORD SITE 95% UTL	15600 (mg/kg)	8.92 (mg/kg)	171.0 (mg/kg)	.66(a) (mg/kg)	27.9 (mg/kg)	19.6 (mg/kg)	28.2 (mg/kg)
130-D-1	**Underground Storage**						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	2490.0 - 2680.0	0.73 (J)	39.5 - 45.4	0.61 (U) - 0.89 (U)	2.5 (J) - 4.2 (J)	6.9 - 7.9	10.2 - 11.4
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	SNL	SNL	SNL	SNL	SNL	SNL	SNL
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	SNL	SNL	SNL	SNL	SNL	SNL	SNL
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	2290.0 (J)	0.58 (UJ)	49.8	0.79 (U)	2.0 (U)	8.0 (U)	10.6 (U)
Average	2437.5	0.4	46.1	0.0	1.7	3.7	5.4
108-D	Demolished Office Building						
0.0 - 5.0	NS	NS	NS	NS	NS	NS	NS
5.0 - 10.0	SNL	SNL	SNL	SNL	SNL	SNL	SNL
Average	SNL	SNL	SNL	SNL	SNL	SNL	SNL
	Sodium Dichromate Tanks						
0.0 - 5.0	SNL	SNL	556.0 - 666.0	SNL	SNL	SNL	SNL
Average	SNL	SNL	611.0	SNL	SNL	SNL	SNL
103-D	Fuel Element Storage Building						
WIPE SAMPLES	3450.0 - 7430.0	2.0 - 3.2	158.0 - 331.0	6.8 - 12.9	14.6 - 48.4	10.0 (U) - 11.1	19.5 - 41.7
Average	5440.0	2.6	244.5	9.9	31.5	5.6	30.6
126-D-2	Solid Waste Landfill						
4A, 4B, 18	Burial Grounds						
115-D	Demolished Gas Recirculation Building						
117-D	Demolished Exhaust Air Filter Building						
	Process Effluent Pipelines						
107-D/107-DR	Sludge Disposal Trenches (5)						

Summary of Investigation for 100-DR-1 Operable Unit - Inorganic Constituents

Site Identification with depth (ft) of sample collection	Iron (mg/kg)	Lead (mg/kg)	Magnesium (mg/kg)	Manganese (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Potassium (mg/kg)
HANFORD SITE 95% UTL	39160 (mg/kg)	14.75 (mg/kg)	8760 (mg/kg)	612 (mg/kg)	1.25 (mg/kg)	25.3 (mg/kg)	3120 (mg/kg)
130-D-1	Underground Storage						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	11900.0 - 12800.0	18.8 - 19.2	2420.0 - 2650.0	204.0 - 236.0	0.05 (U)	5.1 - 7.0	433.0 - 503.0
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	SNL	SNL	SNL	SNL	SNL	SNL	SNL
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	SNL	SNL	SNL	SNL	SNL	SNL	SNL
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	13700.0	2.2 (J)	2660.0 (J)	182.0 (J)	0.05	4.1 (U)	461.0
Average	13025.0	10.6	2597.5	201.0	0.0	3.0	464.5
108-D	Demolished Office Building						
0.0 - 5.0	NS	NS	NS	NS	NS	NS	NS
5.0 - 10.0	SNL	SNL	SNL	SNL	SNL	SNL	SNL
Average	SNL	SNL	SNL	SNL	SNL	SNL	SNL
	Sodium Dichromate Tanks						
0.0 - 5.0	SNL	SNL	SNL	SNL	SNL	SNL	SNL
Average	SNL	SNL	SNL	SNL	SNL	SNL	SNL
103-D							
WIPE SAMPLES	49.3 - 9440.0	68.0 - 274.0	1900.0 - 3990.0	153.0 - 363.0	0.07 - 0.18	8.0 (U) - 15.1	1300.0 - 4630.0
Average	4744.7	171.0	2945.0	258.0	0.1	7.6	2965.0
126-D-2	Solid Waste Landfill						
4A, 4B, 18	Burial Grounds						
115-D	Demolished Gas Recirculation Building						
117-D	Demolished Exhaust Air Filter Building						
	Process Effluent Pipelines						
107-D/107-DR	Sludge Disposal Trenches (5)						

Summary of Investigation for 100-DR-1 Operable Unit - Inorganic Constituents

Site Identification with depth (ft) of sample collection	Silver (mg/kg)	Sodium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)	Comments
HANFORD SITE 95% UTL	2.7 (mg/kg)	1290 (mg/kg)	111.0 (mg/kg)	79.0 (mg/kg)	
130-D-1	Underground Storage				
0.0 - 10.0	NS	NS	NS	NS	
10.0 - 12.5	0.87 - 0.96	159.0 - 185.0	15.5 - 16.7	23.8 - 25.9	
12.5 - 15.0	NS	NS	NS	NS	
15.0 - 17.5	SNL	SNL	SNL	SNL	
17.5 - 20.0	NS	NS	NS	NS	
20.0 - 22.5	SNL	SNL	SNL	SNL	
22.5 - 25.0	NS	NS	NS	NS	
25.0 - 27.5	0.91	166.0	23.3	23.1	
Average	0.9	169.0	19.7	24.0	
108-D	Demolished Office Building				
0.0 - 5.0	NS	NS	NS	NS	
5.0 - 10.0	SNL	SNL	SNL	SNL	
Average	SNL	SNL	SNL	SNL	
	Sodium Dichromate Tanks				
0.0 - 5.0	SNL	SNL	SNL	SNL	
Average	SNL	SNL	SNL	SNL	
103-D	Fuel Element Storage Building				
WIPE SAMPLES	SNL	1000.0 (U) - 1380.0	10.0 (U) - 21.4	191.0 - 1110.0	
Average	0.0	690.0	10.7	650.5	
126-D-2	Solid Waste Landfill				No LFI Investigation
4A, 4B, 18	Burial Grounds				No LFI Investigation
115-D	Demolished Gas Recirculation Building				No LFI Investigation
117-D	Demolished Exhaust Air Filter Building				No LFI Investigation
	Process Effluent Pipelines				No LFI Investigation
107-D/107-DR	Sludge Disposal Trenches (5)				No LFI Investigation

(a) Limit of detection, not the Hanford Site UTL.

Summary of Investigation for 100-HR-1 Operable Unit - Inorganic Constituents

Site Identification with depth (ft) of sample collection	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)
HANFORD SITE 95 % UTL	15.7(a) (mg/kg)	8.92 (mg/kg)	171.0 (mg/kg)	.66(a) (mg/kg)	27.9 (mg/kg)	28.2 (mg/kg)	14.75 (mg/kg)	1.25 (mg/kg)
116-H-1	Process Effluent Disposal Trench							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	1.7 (U)	37.9	72.3	0.21 (U)	16.0	19.0	187.0	0.10 (U)
12.5 - 15.0	1.6 (U) - 4.6 (U)	25.3 (J) - 27.6 (J)	66.0 - 74.5	0.20 (U) - 0.80 (U)	18.9 - 23.5	11.8 - 19.5	118.00 (J) - 145.0 (J)	0.05 - 0.10 (U)
15.0 - 17.5	1.6 (U) - 4.6 (U)	1.8 (U) - 27.6 (J)	52.9 - 74.5	0.20 (U) - 0.80 (U)	17.9 - 29.6	11.8 - 20.5	36.90 (J) - 145.0 (J)	0.05 - 0.10 (U)
17.5 - 20.0	1.5 (U) - 1.6 (U)	1.2 (U)- 1.8 (U)	52.9 - 58.8	0.19 (U)- 0.20 (U)	12.5 - 29.6	17.6 - 20.5	17.6 - 82.1 (J)	0.09 (U)
20.0 - 22.5	1.5 (U)	1.2 (U)	56.8	0.19 (U)	12.5	17.6	2.8 (J)	0.09 (U)
22.5 - 25.0	1.6 (U)	1.2 (U)	72.5	0.19 (U)	10.6	17.6	2.5 (J)	0.09 (U)
25.0 - 27.5	1.6 (U)	1.2 (U)	72.5	0.20 (U)	10.6	16.9	2.5 (J)	0.10 (U)
Average	0.0	11.2	66.3	0.0	16.5	17.4	66.7	0.01
116-H-2	Effluent Disposal Trench							
0.0 - 10.0	1.6 (U)	1.4 (U)	57.6	0.19 (U)	7.6	13.6	2.9 (J)	0.09
10.0 - 12.5	1.6 (U)	1.4 (U)	57.6	0.19 (U)	7.6	13.6	2.9 (J)	0.09
12.5 - 15.0	1.6 (U)	2.0 - 2.1	55.3 - 69.90	0.19 (U)- 0.20 (U)	17.5 (J)- 19.0 (J)	15.8 - 18.40	3.3 - 4.0	0.09
15.0 - 17.5	1.6 (U)	2.0 - 2.1	55.3 - 69.90	0.19 (U)- 0.20 (U)	17.5 (J)- 19.0 (J)	15.8 - 18.40	3.3 - 4.0	0.09
Average	0.0	0.6	59.0	0.0	10.6	14.6	3.2	0.09
116-H-3	Dummy Decontamination French Drain							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	5.9 (U)	1.3 (U)	42.5	0.78 (U)	10.5 (J)	12.9	2.1 (J)	0.09 (U)
15.0 - 17.5	5.9 (U)	1.3 (U)	42.5	0.78 (U)	10.5 (J)	12.9	2.1 (J)	0.09 (U)
17.5 - 20.0	1.6 (U)	1.1 (B)	36.7 (B)	0.20 (U)	10.2	22.5	8.6	0.09 (U)
20.0 - 22.5	1.6 (U)	1.1 (B)	36.7 (B)	0.20 (U)	10.2	22.5	8.6	0.09 (U)
Average	0.0	0.6	39.6	0.0	10.4	17.7	5.4	0.0
116-H-7	Process Effluent Retention Basin							
0.0 - 5.0	6.4 (U)	47.0	94.9	0.75 (U)	12.3	17.0	540.0	0.09 (U)
5.0 - 10.0	6.1 (U) - 6.7 (U)	2.8 - 6.2	64.7 - 67.20	0.72 (U) - 0.78 (U)	14.6 (J)- 28.3 (J)	17.6 - 23.4	5.90 - 10.90	0.45 - 1.1
10.0 - 12.5	6.1 (U)	2.8	64.7	0.78 (U)	28.3 (J)	23.4	5.90	1.1
12.5 - 15.0	6.9 (U)	1.8 (U)	62.1	0.85 (U)	21.6 (J)	16.6	3.80	0.09 (U)
15.0 - 17.5	6.9 (U)	1.8 (U)	62.1	0.85 (U)	21.6 (J)	16.6	3.80	0.09 (U)
17.5 - 20.0	5.9 (U)	1.6 (U)	43.8	0.52 (U)	13.1 (J)	13.5	2.40	0.09 (U)
20.0 - 22.5	5.9 (U)	1.6 (U)	43.8	0.52 (U)	13.1 (J)	13.5	2.40	0.09 (U)
Average	0.0	11.8	66.5	0.0	18.4	17.6	123.9	0.3

Summary of Investigation for 100-HR-1 Operable Unit - Inorganic Constituents

Site Identification with depth (ft) of sample collection	Nickel (mg/kg)	Silver (mg/kg)	Selenium (mg/kg)	Thallium (mg/kg)	Zinc (mg/kg)	Sulfate (mg/kg)	Comments
HANFORD SITE 95 % UTL	25.3 (mg/kg)	2.7 (mg/kg)	5.0(a) (mg/kg)	3.7(a) (mg/kg)	79.0 (mg/kg)	1320.0 (mg/kg)	
116-H-1	Process Effluent Disposal Trench						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	
10.0 - 12.5	10.8	0.42 (U)	4.10 (U)	0.61 (U)	48.7	NS	
12.5 - 15.0	11.5 - 13.9	0.40 (U) - 0.60 (J)	0.40 (U) - 0.83 (U)	0.40 (U) - 0.62 (U)	52.7 (J)- 53.1	NS	
15.0 - 17.5	7.9 - 13.9	0.40 (U) - 0.60 (J)	0.40 (U) - 4.10 (U)	0.40 (U) - 0.62 (U)	38.6 - 53.1	NS	
17.5 - 20.0	7.9 - 9.6	0.39 (U)- 0.40 (U)	4.10 (U)- 4.20 (U)	0.62 (U)- 0.63 (U)	30.5 - 38.6	NS	
20.0 - 22.5	9.6	0.39 (U)	4.20 (U)	0.63 (U)	30.5	NS	
22.5 - 25.0	9.6	0.39 (U)	0.77 (U)	0.58 (U)	30.5	NS	
25.0 - 27.5	9.0	0.40 (U)	0.77 (U)	0.58 (U)	39.10	NS	
Average	10.2	0.1	0.0	0.0	40.3	NS	
116-H-2	Effluent Disposal Trench						
0.0 - 10.0	7.4	0.39 (U)	0.78 (U)	0.58 (U)	31.7	NS	
10.0 - 12.5	7.4	0.39 (U)	0.78 (U)	0.58 (U)	31.7	NS	
12.5 - 15.0	19.2 (J) - 24.4 (J)	0.39 (U)	3.9 (U)- 4.0 (U)	0.79 (U)	30.9 - 35.70	NS	
15.0 - 17.5	19.2 (J) - 24.4 (J)	0.39 (U)	3.9(U) - 4.0 (U)	0.79 (U)	30.9 - 35.70	NS	
Average	11.5	0.0	0.0	0.0	32.2	NS	
116-H-3	Dummy Decontamination French Drain						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	
10.0 - 12.5	NS	NS	NS	NS	NS	NS	
12.5 - 15.0	9.6	0.96 (U)	3.80 (U)	0.38 (U)	39.1 (J)	NS	
15.0 - 17.5	9.6	0.96 (U)	3.80 (U)	0.38 (U)	39.1 (J)	NS	
17.5 - 20.0	8.9	0.39 (U)	0.75 (U)	0.57 (U)	26.2	NS	
20.0 - 22.5	8.9	0.39 (U)	0.75 (U)	0.57 (U)	26.2	NS	
Average	9.3	0.0	0.0	0.0	32.7	NS	
116-H-7	Process Effluent Retention Basin						
0.0- 5.0	11.8	1.0 (U)	4.2 (R)	0.6 (U)	53.1	NS	
5.0 - 10.0	7.3 (U) - 7.6 (U)	0.98 (U) - 1.1 (U)	0.81 (U) - 4.5 (U)	0.4 (U)- 0.5 (U)	56.2 (J) - 83.1 (J)	NS	
10.0 - 12.5	7.6 (U)	1.1 (U)	0.8 (U)	0.4 (U)	83.1 (J)	NS	
12.5 - 15.0	12.7	1.1 (U)	4.2 (U)	0.4 (U)	44.3 (J)	NS	
15.0 - 17.5	12.7	1.1 (U)	4.2 (U)	0.4 (U)	44.3 (J)	NS	
17.5 - 20.0	7.6	1.0 (U)	0.8 (U)	0.4 (U)	40.3 (J)	NS	
20.0 - 22.5	7.6	1.0 (U)	0.8 (U)	0.4 (U)	40.3 (J)	NS	
Average	7.1	0.0	0.9	0.0	55.3	NS	

Summary of Investigation for 100-HR-1 Operable Unit - Inorganic Constituents

Site Identification with depth (ft) of sample collection	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)
HANFORD SITE 95 % UTL	15.7(a) (mg/kg)	8.92 (mg/kg)	171.0 (mg/kg)	.66(a) (mg/kg)	27.9 (mg/kg)	28.2 (mg/kg)	14.75 (mg/kg)	1.25 (mg/kg)
116-H-9	Confinement Seal Pit Drainage Crib							
0.0 - 10.0	80.1 (U)	2.1 (U)	672.0	10.6 (U)	114.00	195.0	7.9	0.10 (U)
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	5.9 (U)	3.2 (U)	72.5	0.75 (U)	11.20	34.9	4.2	0.09 (U)
20.0 - 22.5	5.9 (U) - 6.2 (U)	1.6(U) - 3.2 (U)	72.5 - 73.5	0.75 (U) - 1.1 (U)	8.50 - 11.20	13.1 - 34.9	2.6 (U)- 4.2	0.09 (U)
22.5 - 25.0	6.2 (U)	1.6 (U)	73.5	1.1 (U)	8.50	13.1	2.6 (U)	0.09 (U)
Average	0.0	0.0	415.3	0.0	69.4	121.7	5.4	0.0
116-H-5	Process Effluent Outfall Structure							
116-H-7	Sludge Burial Trench							
132-H-3	Effluent Pumping Station							
132-H-2	Exhaust Air Filter Building							
116-H-4	Pluto Crib							
132-H-1	Reactor Exhaust Stack							
	Process Effluent Pipelines							
1607-H2	Septic Tank							
Sludge Samples	18.6 - 30.3 (U)	8.9 - 24.1	1930.0 - 4260.0	22.5 - 28.5	1020.0 - 2510.0	534.0 - 627.0	419.0 - 499.0	34.1 - 37.0
Average	18.6	16.5	3095.0	25.5	1765.0	580.5	459.0	35.55
Water Samples(b)	11.0 (U) - 14.7	4.0 (U)	1.0 (U) - 25.2	1.0 (U)	2.0 (U)	3.0 (U)	1.0 (U) - 1.5	0.2 (UJ) - 0.26 (J)
1607-H4	Septic Tank							
Surface Soil from Tank Leach Field	3.2 (U) - 12.1 (U)	0.94 (B) - 2.0 (U)	27.3 (B) - 40.4 (B)	0.29 (U) - 1.0 (U)	8.2 - 9.4	11.3 - 15.6	2.7 - 3.5	0.04 (U) - 0.1 (U)
Soil from Tank Discharge Pipe	3.3 (U)	7.8	226.0	0.31 (U)	19.8	40.2	50.0	0.5
Average	0.0	4.1	129.9	0.0	14.3	26.1	27.9	0.3
	Electrical Facilities							

Summary of Investigation for 100-HR-1 Operable Unit - Inorganic Constituents

Site Identification with depth (ft) of sample collection	Nickel (mg/kg)	Silver (mg/kg)	Selenium (mg/kg)	Thallium (mg/kg)	Zinc (mg/kg)	Sulfate (mg/kg)	Comments
HANFORD SITE 95 % UTL	25.3 (mg/kg)	2.7 (mg/kg)	5.0(a) (mg/kg)	3.7(a) (mg/kg)	79.0 (mg/kg)	1320.0 (mg/kg)	
116-H-9	Confinement Seal Pit Drainage Crib						Inorganic analysis for data from 0 ft to 10 ft is suspect
0.0 - 10.0	132.0	12.90 (U)	4.00 (U)	0.59 (U)	430.0	NS	
10.0 - 12.5	NS	NS	NS	NS	NS	NS	
12.5 - 15.0	NS	NS	NS	NS	NS	NS	
15.0 - 17.5	NS	NS	NS	NS	NS	NS	
17.5 - 20.0	28.0	0.95 (U)	0.76 (U)	0.57 (U)	42.2	NS	
20.0 - 22.5	8.0 - 28.0	0.95 (U) - 0.99 (U)	0.76 (U) - 0.79 (U)	0.57 (U) - 0.59 (U)	32.8 - 42.2	NS	
22.5 - 25.0	8.0	0.99 (U)	0.79 (U)	0.59 (U)	32.8	NS	
Average	83.1	0.0	0.0	0.0	261.8	NS	
116-H-5	Process Effluent Outfall Structure						No LFI Investigation
116-H-7	Sludge Burial Trench						No LFI Investigation
132-H-3	Effluent Pumping Station						No LFI Investigation
132-H-2	Exhaust Air Filter Building						No LFI Investigation
116-H-4	Pluto Crib						No LFI Investigation
132-H-1	Reactor Exhaust Stack						No LFI Investigation
	Process Effluent Pipelines						No LFI Investigation
1607-H2	Septic Tank						
Sludge Samples	51.2 - 56.4	107.0 - 119.0	4.0 (U) - 7.8 (J)	3.5 - 5.4 (J)	4080.0 - 6160.0	4425.0 - 7115.0	
Average	53.8	113.0	3.9	4.5	5120.0	5670.0	
Water Samples(b)	4.0 (U)	2.0 (U)	4.0 (U)	3.0 (U) - 15.0 (U)	3.0 (U) - 4.3	NS	
1607-H4	Septic Tank						
Surface Soil from Tank Leach Field	8.1 (U) - 8.4	0.93 (U) - 2.0 (U)	0.7 (U) - 1.0 (U)	0.3 (U) - 2.0 (U)	25.2 - 33.6	NS	
Soil from Tank Discharge Pipe	12.8	0.98 (U)	0.8 (U)	0.34 (U)	194.0	NS	
Average	8.5	0.0	0.0	0.0	111.7	NS	
	Electrical Facilities						No suspected inorganic contamination

(a) Limit of detection, not Hanford Site UTL

(b) Units for water samples are ug/l

Summary of Investigation for 100-NR-1 Operable Unit - Inorganic Constituents

Site Identification with depth (ft) of sample collection	Cadmium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Manganese (mg/kg)	Zinc (mg/kg)	Comments
HANFORD SITE 95 % UTL	.66(a) (mg/kg)	28.2 (mg/kg)	14.75 (mg/kg)	612 (mg/kg)	79.0 (mg/kg)	
116-N-2	Chemical Waste Storage Tank					** Duplicate Analysis not within control
0.0 - 6.0	ND	26.0	171.0 **	312.0 (S)	68.8	
6.0 - 15.0	ND	20.6	2.7	284.0	37.1 (J)	
>15	ND	16.5	1.8	254.0	36.7 (J)	
Average	0.0	21.0	58.5	283.3	47.5 (J)	
UPR-100-N-9 & UPR-100-N-14						
0.0 - 6.0	NS	NS	NS	NS	NS	
6.0 - 15.0	ND	25.3 (J)	10.5	267(S)	37.0	
>15	ND	22.3 (J)	2.8	295(S)	42.4	
Average	0.0	23.8	6.7	281.0	39.7	
120-N-1	Percolation Pond					** Duplicate Analysis not within control
0.0 - 6.0	ND	14.8 - 28.7	5.1 - 5.9 (M)	227.0 (S) ** - 271.0	42.4 (JS) - 94.4 (J) **	
6.0 - 15.0	ND	9.0 - 20.2	4.1 - 6.0	275.0 (S) ** - 285.0	51.50 (J) - 77.4 (J) **	
>15	ND	19.1 - 30.6	2.6 - 6.4	217.0 - 702.0	41.6 (J) ** - 53.6	
Average	0.0	20.4	5.0	329.5	60.2	
120-N-2	Surface Impoundment					
0.0 - 6.0	ND	19.9	5.9	326.0	61.5 (J)	
6.0 - 15.0	ND	31.5	2.4	316.0	45.4	
>15	ND - 3.1	24.8 - 34.9	3.8 - 6.3	292.0 - 328.0	43.1 - 43.2	
Average	0.5	27.1	4.5	317.3	50.0	
UPR-100-N-4 & UPR-100-N-8						** Duplicate Analysis not within control
0.0 - 6.0	ND	29.8	15.8 **	297.0 (S)	91.6	
6.0 - 15.0	ND	7.0	3.3	198.0	32.9	
>15	ND	16.1	2.0	268.0	41.1	
Average	0.0	17.6	7.0	254.3	55.2	

Summary of Investigation for 100-NR-1 Operable Unit - Inorganic Constituents

Site Identification with depth (ft) of sample collection	Cadmium (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Manganese (mg/kg)	Zinc (mg/kg)	Comments
HANFORD SITE 95 % UTL	.66(a) (mg/kg)	28.2 (mg/kg)	14.75 (mg/kg)	612 (mg/kg)	79.0 (mg/kg)	
116-N-1						** Duplicate Analysis not within control
0.0 - 6.0	0.52 (UJ) - 0.61 (UJ)	15.4 - 18.7	4.5 - 5.1	269.0 (S) - 320.0(S)	41.8 - 42.8	
6.0 - 15.0	0.49 (UJ)	15.8	4.2	317.0 (S)	40.2	
>15	ND - 0.91 (UJ)	13.5 - 25.9	2.7 - 7.6 **	227.0 - 345.0	29.0 - 46.9	
Average	0.0	17.5	4.7	299.2	40.2	
UN-100-N-17						** Duplicate Analysis not within control
0.0 - 6.0	NS	NS	NS	NS	NS	
6.0 - 15.0	NS	NS	NS	NS	NS	
>15	ND	25.4	3.5	462.0 **	41.7	
Average	0.0	25.4	3.5	462.0	41.7	

(a) Limit of Detection, not Hanford Site UTL.

Summary of Investigation for 300-FF-1 Operable Unit - Inorganic Constituents

Site Identification with depth (ft) of sample collection	Aluminum (mg/kg)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)
HANFORD SITE 95 % UTL	15600 (mg/kg)	15.7(a) (mg/kg)	8.92 (mg/kg)	171.0 (mg/kg)	1.77 (mg/kg)	.66(a) (mg/kg)	27.9 (mg/kg)	19.6 (mg/kg)
316-1	South Process Pond							
0.0 - 2.5	4100 - 48400	1.6 (UJ) - 10.4 (UJ)	1.5 (U) - 23.3	62.2 - 245.0	0.2 (U) - 3.2	0.19 (U) - 13.2	4.6 (U) - 604.0	8.8 (B) - 17.7
2.5 - 5.0	5310 - 19700	1.5 (UJ) - 10.0 (UJ)	1.3 (U) - 5.9	64.9 - 158.0	0.18 (U) - 0.52 (U)	0.19 (U) - 0.99 (UJ)	3.4 (U) - 110.0	9.5 - 15.0
5.0 - 10.0	4590 - 8530	1.5 (UJ) - 15.4	1.3 (U) - 2.9	66.7 - 93.8	0.19 (U) - 0.27 (U)	0.19 (U) - 0.6 (U)	4.0 (U) - 36.4	8.8 (B) - 13.7
10.0 - 15.0	4300 - 7910	1.6 (UJ) - 9.6 (UJ)	1.0 (U) - 2.3 (U)	62.7 - 86.8	0.2 (U) - 0.38 (U)	0.2 (U) - 0.62 (U)	3.1 - 7.8	10.8 - 13.2
15.0 - 20.0	6000 - 7690	1.6 (UJ) - 10.0 (U)	1.5 (U) - 2.0 (U)	67.6 - 96.2	0.2 (U) - 0.89 (U)	0.2 (U) - 0.64 (U)	5.3 (U) - 11.3	5.5 - 12.5
20.0 - 25.0	5580 - 6570	1.7 (UJ) - 9.8 (U)	1.4 (U) - 1.9 (U)	82.0 - 86.7	0.2 (U) - 0.91 (U)	0.21 (U) - 0.66 (U)	4.5 (U) - 6.9	6.4 - 11.4
25.0 - 30.0	6720 - 10600	1.7 (UJ) - 10.4 (UJ)	1.3 (U) - 2.2 (U)	86.7 - 135.0	0.21 (U) - 0.41 (U)	0.22 (U) - 0.66 (U)	3.8 (U) - 9.9	6.2 (U) - 12.7
30.0 - 35.0	4590 - 10900	1.7 (J) - 9.8 (UJ)	0.9 (U) - 2.3 (U)	90.9 - 109.0	0.2 (U) - 0.8 (U)	0.22 (U) - 0.63 (U)	4.4 (U) - 11.2	4.6 (U) - 11.9
35.0 - 40.0	3890 - 8750	1.7 (J) - 9.1 (UJ)	0.93 (UJ) - 2.7	65.4 - 85.8	0.19 (U) - 0.7 (U)	0.22 (U) - 0.58 (U)	4.7 (U) - 8.4	4.6 (U) - 11.3
40.0 - 45.0	5500 - 7730	1.7 (UJ) - 12.2 (UJ)	1.3 (UJ) - 3.5	85.2 - 107.0	0.26 (U) - 0.39 (U)	0.21 (U) - 0.78 (U)	4.1 (U) - 8.2	10.1 (B) - 12.9 (B)
Average	8255.8'	1.0	2.4	92.9	0.1	0.4	25.6	9.3
316-2	North Process Pond							
0.0 - 2.5	6750.0 - 16700.0	1.6 (U) - 9.3 (U)	2.0 (U) - 4.3	79.6 - 315.0	0.23 (U) - 1.9	0.2 (U) - 0.62 (U)	7.9 - 171.0	4.2 (B) - 14.3
2.5 - 5.0	4190.0 - 31000.0	1.5 (U) - 7.3 (U)	0.99 (U) - 2.6	60.2 - 242.0	0.19 (U) - 3.3	0.19 (U) - 1.90 (U)	2.3 - 553.0	3.9 (B) - 13.9
5.0 - 10.0	4420.0 - 14600.0	1.5 (U) - 12.3 (B)	1.3 (U) - 3.2	64.3 - 88.2	0.19 (U) - 0.59 (U)	0.19 (U) - 1.7 (U)	3.4 (U) - 164.0	9.8 (B) - 11.9
10.0 - 15.0	3690.0 - 7620.0	1.7 (U) - 9.7 (UJ)	0.48 (U) - 2.0 (U)	64.0 - 91.3	0.21 (UJ) - 0.77 (U)	0.2 (U) - 1.2 (U)	2.2 (U) - 37.4	10.0 (B) - 18.0
15.0 - 20.0	5480.0 - 9410.0	1.6 (B) - 9.7 (U)	1.6 (U) - 4.8	60.4 - 117.0	0.20 (U) - 1.1	0.2 (U) - 0.62 (U)	5.1 (U) - 64.0	8.2 (B) - 13.5
20.0 - 25.0	4170.0 - 8840.0	1.6 (B) - 7.1 (B)	1.3 (U) - 3.3	57.0 - 140.0	0.20 (U) - 0.74 (U)	0.2 (U) - 0.22 (U)	3.0 (U) - 13.1	9.0 (B) - 13.1
25.0 - 30.0	6680.0 - 13100.0	1.8 (U) - 12.9 (UJ)	1.8 (U) - 2.5 (B)	110.0 - 179.0	0.27 (U) - 1.3	0.21 (U) - 0.82 (U)	6.0 (U) - 20.7	10.7 (B) - 16.0
30.0 - 35.0	4450.0 - 21400.0	1.6 (U) - 11.8 (UJ)	1.4 (U) - 3.8	61.3 - 169.0	0.21 (U) - 1.1 (B)	0.2 (U) - 0.75 (U)	3.2 (U) - 45.0	10.1 (B) - 13.5 (B)
Average	9512.9	1.6	1.3	110.7	0.4	0.0	50.8	11.6
316-5	Process Trenches (Data from East Trench Post-ERA)							
0.0 - 2.5	2314.0 - 3339.0	0.3 (U) - 2.18 (B)	0.74 (U) - 0.9 (U)	47.6 - 84.3	0.1 (U) - 0.17 (U)	0.04 (UB) - 0.39 (UB)	0.0 (NU) - 0.30 (U)	4.9 - 6.9
316-5	Process Trenches (Test Pit Data from West Trench)							
0.0 - 2.5	5530.0 - 8850.0	2.2 (UJ) - 5.5 (UJ)	1.7 (J) - 2.1 (J)	85.7 - 121.0	0.3 (J) - 0.46 (J)	0.4 (U) - 0.47 (U)	6.2 - 7.2	12.9 - 14.3
2.5 - 5.0	5130.0	6.1 (J)	1.8 (J)	79.5	0.20 (U)	0.39 (U)	8.6	12.6
5.0 - 10.0	9120.0	5.9 (J)	2.1	105.0	0.42 (J)	0.44 (U)	7.0	13.9
10.0 - 15.0	5230.0	22.9 (UJ)	1.9 (UJ)	79.9	0.33 (U)	0.69 (U)	4.1 (J)	10.2
15.0 - 20.0	6000.0	13.4 (UJ)	2.5 (UJ)	92.3	0.39 (U)	0.68 (U)	5.4 (J)	12.8
Average	6205.2	2.1	0.9	89.3	0.1	0.0	5.4	11.8

Summary of Investigation for 300-FF-1 Operable Unit - Inorganic Constituents

Site Identification with depth (ft) of sample collection	Copper (mg/kg)	Lead (mg/kg)	Manganese (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)
HANFORD SITE 95 % UTL	28.2 (mg/kg)	14.75 (mg/kg)	612 (mg/kg)	1.25 (mg/kg)	25.3 (mg/kg)	5.0(a) (mg/kg)	2.7 (mg/kg)
316-1	South Process Pond						
0.0 - 2.5	19.9 - 95300.0	3.1 (U) - 351.0	35.0 - 681.0	0.1 (U) - 9.3	6.8 - 1750.0	0.46 (UR) - 5.7 (U)	0.4 (U) - 362.0
2.5 - 5.0	22.5 - 2820.0	2.8 (U) - 34.4	249.0 - 484.0	0.09 (U) - 4.8	5.9 (U) - 329.0	0.78 (UR) - 0.86 (UR)	0.37 (U) - 47.1
5.0 - 10.0	25.4 - 1280.0	2.6 (U) - 15.7	214.0 - 346.0	0.09 (U) - 1.7	5.5 (U) - 68.3	0.77 (UR) - 4.1 (U)	0.38 (U) - 5.0 (U)
10.0 - 15.0	18.6 - 29.9	2.2 (U) - 5.9	264.0 - 370.0	0.09 (U) - 0.47	0.6 (UJ) - 11.1 (U)	0.79 (UR) - 0.86 (BR)	0.4 (U) - 0.82 (U)
15.0 - 20.0	27.8 (J) - 520.0	2.4 (U) - 6.2	275.0 - 372.0	0.13 - 0.64 (J)	7.2 (U) - 22.8	0.83 (UJ) - 4.2 (U)	0.81 (U) - 1.3 (U)
20.0 - 25.0	17.2 - 82.7 (J)	3.2 (U) - 9.9	288.0 - 300.0	0.1 (U) - 0.49 (J)	5.9 (UJ) - 11.2 (U)	0.81 (UJ) - 0.9 (U)	0.41 (U) - 1.3 (U)
25.0 - 30.0	20.7 - 62.8	3.5 - 12.7	268.0 - 360.0	0.09 (U) - 0.73	5.1 (U) - 10.7 (U)	0.84 (UJ) - 0.88 (UR)	0.43 (U) - 1.1 (U)
30.0 - 35.0	18.9 - 26.0	3.2 (U) - 10.0	227.0 - 921.0	0.09 (U) - 0.71	5.6 (U) - 9.7 (U)	0.87 (U) - 5.1 (UJ)	0.43 (U) - 1.3 (U)
35.0 - 40.0	15.5 - 55.8	3.3 (U) - 10.5	199.0 - 287.0	0.11 (U) - 0.34 (J)	5.5 (U) - 9.1 (U)	0.74 (U) - 5.6 (UJ)	0.43 (U) - 1.4 (U)
40.0 - 45.0	17.4 - 65.8	3.2 (U) - 6.1	341.0 - 405.0	0.09 (U) - 0.13	5.6 (U) - 10.7 (U)	0.87 (UR) - 1.0 (UR)	0.41 (U) - 1.0 (U)
Average	2853.7	15.2	342.3	0.7	63.0	0.0	11.4
316-2	North Process Pond						
0.0 - 2.5	27.2 - 2600.0	4.3 - 19.0	63.0 - 385.0	0.1 - 2.0	14.4 - 322.0	0.75 (U) - 1.7	0.4 (U) - 33.6
2.5 - 5.0	31.7 - 41100.0	2.2 (U) - 111.0	118.0 - 402.0	0.1 - 6.0	4.9 (U) - 1020.0	0.79 (U) - 4.7 (UJ)	0.38 (U) - 168.0 (J)
5.0 - 10.0	18.7 - 3670.0	2.7 (U) - 13.1 (UJ)	231.0 - 303.0	0.14 - 0.58	6.8 (BU) - 154.0	0.76 (U) - 0.83 (U)	0.38 (U) - 8.8 (U)
10.0 - 15.0	20.4 - 1400.00	2.1 (U) - 6.2	223.0 - 442.0 (J)	0.1 (U) - 0.35	8.6 (U) - 53.7	0.79 (U) - 0.83 (U)	0.42 (U) - 1.3 (U)
15.0 - 20.0	9.1 (U) - 2610.0	2.7 (U) - 25.1	265.0 - 412.0	0.1 (U) - 0.62	9.2 (U) - 41.2	0.8 (U) - 4.1 (U)	0.41 (U) - 3.3 (U)
20.0 - 25.0	15.1 - 427.0	3.4 - 4.5	271.0 - 345.0	0.09 (U) - 0.57	5.5 (U) - 21.8	0.76 (U) - 0.86 (U)	0.39 (U) - 1.1 (U)
25.0 - 30.0	18.8 - 1060.0	4.5 - 8.3	325.0 - 376.0	0.11 (U) - 0.37	8.2 (U) - 21.9	0.87 (U) - 1.0 (U)	0.46 (U) - 3.0 (U)
30.0 - 35.0	16.3 - 3350.0	4.2 - 16.7	255.0 - 572.0	0.09 (U) - 0.86	5.3 (U) - 37.4	0.8 (U) - 1.4 (U)	0.41 (U) - 9.5
Average	2463.3	10.0	321.7	0.5	72.0	0.1	7.9
316-5	Process Trenches (Data from East Trench Post-ERA)						
0.0 - 2.5	15.5 - 111.0	1.3 (U) - 1.53 (U)	159.5 - 294.5	0.01 - 0.07	6.0 (U) - 16.7	0.21 (U) - 0.22 (U)	0.24 (U) - 43.2
316-5	Process Trenches (Test Pit Data from West Trench)						
0.0 - 2.5	53.2 - 53.7	3.9 (J) - 6.1 (J)	528.0 - 638.0	0.10 - 0.12	29.10 - 29.20	0.86 (UJ) - 0.95 (UJ)	0.66 (U) - 1.0 (U)
2.5 - 5.0	60.4	3.7 (J)	525.0	0.14	32.3	0.82 (UJ)	0.87 (U)
5.0 - 10.0	25.5	5.1 (J)	396.0	0.10	12.0	0.86 (UJ)	0.44 (U)
10.0 - 15.0	38.3	3.1	324.0 (J)	0.11 (U)	16.0	0.88 (UJ)	0.92 (U)
15.0 - 20.0	68.6	3.6	331.0 (J)	0.20	17.0	0.85 (UJ)	0.90 (U)
Average	49.1	3.6	381.9	0.1	17.8	0.0	2.4

Summary of Investigation for 300-FF-1 Operable Unit - Inorganic Constituents

Site Identification with depth (ft) of sample collection	Vanadium (mg/kg)	Zinc (mg/kg)	Comments
HANFORD SITE 95 % UTL	111.0 (mg/kg)	79.0 (mg/kg)	
316-1	South Process Pond		
0.0 - 2.5	32.3 - 239.0	31.7 (U) - 759.0	
2.5 - 5.0	34.8 - 64.5	31.4 (U) - 151.0	
5.0 - 10.0	34.9 - 69.8	28.8 (U) - 98.5	
10.0 - 15.0	45.5 - 56.3	35.9 (U) - 45.3 (U)	
15.0 - 20.0	35.6 - 61.8	37.4 (U) - 48.0 (U)	
20.0 - 25.0	37.1 - 51.1	34.6 (U) - 45.0 (U)	
25.0 - 30.0	38.0 - 57.4	40.5 (U) - 49.0 (U)	
30.0 - 35.0	33.6 - 54.6	35.6 (U) - 47.1 (U)	
35.0 - 40.0	26.8 - 43.6	30.6 (U) - 40.0 (U)	
40.0 - 45.0	40.6 - 55.8	32.9 (U) - 46.6 (U)	
Average	51.5	30.8	
316-2	North Process Pond		
0.0 - 2.5	37.8 - 68.4	35.0 (U) - 102.0	
2.5 - 5.0	31.7 - 161.0	33.0 (U) - 241.0	
5.0 - 10.0	37.6 - 49.0	33.0 (U) - 53.5	
10.0 - 15.0	39.7 - 87.4	33.1 (U) - 53.3	
15.0 - 20.0	35.0 - 70.6	38.0 (U) - 51.3	
20.0 - 25.0	37.8 - 52.7	33.8 (U) - 53.6	
25.0 - 30.0	43.1 - 81.2	51.6 (U) - 52.8	
30.0 - 35.0	40.2 - 55.7	42.6 (U) - 73.3	
Average	55.7	36.4	
316-5	Process Trenches (Data from East Trench)		
0.0 - 2.5	8.8 - 12.0	21.1 (U) - 45.7 (U)	
316-5	Process Trenches (Data from West Trench)		
0.0 - 2.5	57.6 - 57.9	86.9 (J) - 95.9 (J)	
2.5 - 5.0	50.1	93.4 (J)	
5.0 - 10.0	57.3	58.0 (J)	
10.0 - 15.0	45.3	63.8	
15.0 - 20.0	47.9	59.0	
Average	46.6	60.7	

Summary of Investigation for 300-FF-1 Operable Unit - Inorganic Constituents

Site Identification with depth (ft) of sample collection	Aluminum (mg/kg)	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Cobalt (mg/kg)
HANFORD SITE 95 % UTL	15600 (mg/kg)	15.7(a) (mg/kg)	8.92 (mg/kg)	171.0 (mg/kg)	1.77 (mg/kg)	.66(a) (mg/kg)	27.9 (mg/kg)	19.6 (mg/kg)
	North Sanitary Sewer System							
Surface Grab Samples	5760.0 - 15500.0	11.3 (U) - 38.3 (U)	0.45 (UJ) - 1.7 (UJ)	110.0 - 408.0	0.25 (U) - 0.8 (U)	0.96 (U) - 23.0	17.5 - 122.0	7.3 (U) - 10.4 (B)
Average	10630.0	0.0	0.0	259.0	0.0	11.5	69.8	5.2
	Ash Pits							
Surface Grab Samples	4010.0 - 7140.0	4.3 (U) - 5.66 (U)	1.7 (U) - 5.2	292.0 - 424.0	0.85 (U) - 1.7	0.9 (U) - 1.19 (UJ)	0.68 (U) - 7.6	2.7 (B) - 4.7 (B)
Average	5575.0	0.0	2.6	358.0	0.9	0.0	3.8	3.7
	Retired Filter Backwash Pond (Infiltration Basin of South Process Pond)							
	Filter Backwash Pond							
Surface Grab Samples	2210.0 - 7920.0	2.87 (U) - 4.11 (U)	0.81 (U) - 12.5	39.4 - 66.7	0.23 (U) - 0.43 (U)	0.61 (U) - 0.87 (UJ)	0.45 (U) - 28.9	4.1 (B) - 8.9
Average	5065.0	0.0	6.3	53.1	0.0	0.0	14.5	6.5
618-4	**Burial Ground No. 4**							
0.0 - 2.5	6250.0 - 58600.0	6.6 (U) - 10.8 (U)	2.1 (U) - 7.6 (B)	74.1 - 413.0	0.23 (U) - 0.35 (U)	0.39 (U) - 0.58 (U)	9.4 - 960.0	9.4 (B) - 10.4 (B)
2.5 - 5.0	16600.0	6.3 (U)	1.7 (U)	89.3	0.22 (U)	0.57 (U)	19.2	10.9
5.0 - 10.0	13000.0 - 57400.0	6.4 (U) - 9.8 (U)	1.9 (U) - 6.3 (B)	80.5 - 267.0	0.21 (U) - 0.3 (U)	0.36 (U) - 0.68 (U)	20.6 - 509.0	7.8 (B) - 10.7
10.0 - 15.0	4800.0 - 52100.0	6.1 (U) - 6.7 (U)	1.3 (U) - 2.0 (U)	78.7 - 84.7	0.2 (U) - 0.22 (U)	0.84 (U) - 1.2 (U)	10.0 - 44.7	11.0 - 13.7
15.0 - 20.0	5360.0	6.3 (U)	1.0 (U)	78.4	0.25 (U)	0.84 (U)	5.0	14.5
20.0 - 25.0	8830.0	6.6 (U)	1.2 (U)	88.9	0.23 (U)	0.78 (U)	8.7	14.3
Average	20470.5	0.0	1.0	117.8	0.0	0.0	111.6	12.2
618-5	**Burial Ground No. 5**							
0.0 - 2.5	4510.0 - 12900.0	1.5 (UJ) - 1.8 (UJ)	1.4 (U) - 5.3	55.9 - 3130.0	0.19 (U) - 1.0 (U)	0.19 (U) - 0.29 (U)	5.2 - 12.4	7.1 (B) - 10.5
2.5 - 5.0	NS	NS	NS	NS	NS	NS	NS	NS
5.0 - 10.0	5940.0 - 8820.0	1.6 (UJ)	4.2	157.0	0.2 (U)	0.2 (U)	10.1	14.8
10.0 - 15.0	8110.0	2.5 (B)	4.4	181.0	0.37 (U)	3.4	49.1	9.6 (B)
15.0 - 20.0	9820.0	1.7 (U)	3.5	965.0	0.67 (U)	1.2 (U)	16.6	9.3 (B)
20.0 - 25.0	7540.0	1.7 (U)	2.7	553.0	0.69 (U)	1.2 (U)	10.8	11.6
25.0 - 30.0	7140.0	1.7 (U)	2.6	170.0	0.67 (U)	0.21 (U)	9.3	9.9 (B)
Average	8062.3	0.5	3.5	513.2	0.0	0.6	18.2	10.8
618-12	**North Process Pond Scraping Disposal Area**							
	322 Hazardous Waste Staging Area							

Summary of Investigation for 300-FF-1 Operable Unit - Inorganic Constituents

Site Identification with depth (ft) of sample collection	Copper (mg/kg)	Lead (mg/kg)	Manganese (mg/kg)	Mercury (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)
HANFORD SITE 95 % UTL	28.2 (mg/kg)	14.75 (mg/kg)	612 (mg/kg)	1.25 (mg/kg)	25.3 (mg/kg)	5.0(a) (mg/kg)	2.7 (mg/kg)
	North Sanitary Sewer System						
Surface Grab Samples	49.7 - 881.0	3.3 (U) - 500.0	99.4 - 125.0	0.46 - 4.1	9.0 (U) - 33.1	0.54 (UJ) - 7.7 (J)	18.4 - 320.0
Average	465.4	250.0	112.2	2.3	16.6	3.9	169.2
	Ash Pits						
Surface Grab Samples	19.2 - 54.9	7.28 - 57.4	15.4 - 45.3	0.12 (U) - 0.19 (J)	23.2 - 66.9	0.27 (U) - 3.7	0.9 (U) - 1.2 (U)
Average	37.1	32.3	30.4	0.1	45.1	1.9	0.0
	Retired Filter Backwash Pond (Infiltration Basin of South Process Pond)						
	Filter Backwash Pond						
Surface Grab Samples	8.9 (U) - 95.3	1.6 (U) - 45.1	138.0 - 470.0	0.1 (U) - 0.14 (UJ)	2.4 (U) - 12.0 (U)	0.17 (U) - 0.73 (B)	0.61 (U) - 1.0 (U)
Average	47.7	22.6	304.0	0.0	0.0	0.4	0.0
618-4	Burial Ground No. 4						
0.0 - 2.5	10.5 (U) - 217.0	3.5 - 143.0	154.0 - 338.0	0.09 (U) - 6.7	9.9 (U) - 565.0	0.79 (U) - 1.5 (U)	1.10 (U) - 152.0
2.5 - 5.0	56.3	104.0	346.0	0.23	19.0	0.86 (U)	1.00 (U)
5.0 - 10.0	31.4 - 228.0	81.9	176.0 - 298.0	0.56 - 5.3	16.2 - 240.0	4.2 (U) - 5.9 (U)	1.0 (U) - 125.0
10.0 - 15.0	15.8 - 67.0	3.0 (U) - 747.0	289.0 - 312.0	0.09 (U) - 0.48	42.2	0.81 (U) - 4.0 (U)	0.98 (U) - 1.1 (U)
15.0 - 20.0	16.2	3.8	321.0	0.08 (U)	8.0 (U)	3.9 (U)	1.0 (U)
20.0 - 25.0	17.8	25.8	362.0	0.1 (U)	11.5 (U)	4.2 (U)	1.1 (U)
Average	57.5	114.7	303.3	1.0	64.2	0.0	20.1
618-5	Burial Ground No. 5						
0.0 - 2.5	20.5 - 101.0 (J)	3.5 (J) - 13.3 (J)	247.0 - 333.0 (J)	0.1 (U) - 1.2	6.6 (U) - 11.7 (U)	0.79 (UJ) - 4.2 (UR)	0.38 (U) - 0.44 (U)
2.5 - 5.0	NS	NS	NS	NS	NS	NS	NS
5.0 - 10.0	22.1 (J)	5.5 - 13.3 (J)	378.0	0.09 (U) - 1.2	12.1 (U)	3.9 (UR)	0.4 (U)
10.0 - 15.0	380.0	98.2	344.0	1.5	28.9	0.94 (U)	2.0 (U)
15.0 - 20.0	366.0	130.0	337.0	1.3	102.0	4.2 (U)	0.43 (U)
20.0 - 25.0	136.0	26.4	295.0	0.25	20.4	0.89 (U)	1.5 (U)
25.0 - 30.0	104.0	22.1	387.0	0.21	15.3	0.82 (U)	0.42 (U)
Average	188.8	52.8	342.9	0.8	30.3	0.0	0.0
618-12	North Process Pond Scraping Disposal Area						
	322 Hazardous Waste Staging Area						

Summary of Investigation for 300-FF-1 Operable Unit - Inorganic Constituents

Site Identification with depth (ft) of sample collection	Vanadium (mg/kg)	Zinc (mg/kg)	Comments
HANFORD SITE 95 % UTL	111.0 (mg/kg)	79.0 (mg/kg)	
	North Sanitary Sewer System		
Surface Grab Samples	32.2 - 69.2	283.0 - 3830.0	
Average	50.7	2056.5	
Surface Grab Samples	76.9 - 161.0	23.9 (U) - 59.4 (U)	
Average	119.0	0.0	
	Retired Filter Backwash Pond		No LFI Investigation
	Filter Backwash Pond		
Surface Grab Samples	9.9 - 23.1	16.5 (U) - 105.0	
Average	16.5	52.5	
618-4	Burial Ground No. 4		
0.0 - 2.5	21.2 - 47.7	43.8 (U) - 268.0	
2.5 - 5.0	51.8	80.70 (U)	
5.0 - 10.0	39.0 - 48.0	63.5 (U) - 184.0	
10.0 - 15.0	53.1 - 64.8	46.6 (U) - 112.0 (U)	
15.0 - 20.0	65.3	48.9 (U)	
20.0 - 25.0	68.3	56.3 (U)	
Average	55.8	31.8	
618-5	Burial Ground No. 5		
0.0 - 2.5	34.1 - 47.1	31.9 (UJ) - 79.1 (U)	
2.5 - 5.0	NS	NS	
5.0 - 10.0	75.7	48.0 (UJ)	
10.0 - 15.0	36.9	523.0	
15.0 - 20.0	38.6	304.0	
20.0 - 25.0	41.6	228.0	
25.0 - 30.0	39.6	93.7	
Average	45.9	208.9	
618-12	North Process Pond Scraping Disposal Area		No LFI Investigation
	322 Hazardous Waste Staging Area		No LFI Investigation

(a) Limit of detection, not Hanford Site UTL.

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APPENDIX B-2

SUMMARY CONSTITUENT TABLES FOR ORGANIC CONSTITUENTS

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Summary of Investigation for 100-BC-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Volatile Organic Analysis						Semivolatile Organic Analysis	
	Acetone (ug/kg)	Benzene (ug/kg)	2-Butanone (ug/kg)	Carbon-disulfide (ug/kg)	4-Methyl-2-Pentanone (ug/kg)	Toluene (ug/kg)	Anthracene (ug/kg)	Benzo(a) anthracene (ug/kg)
116-B-1	Liquid Waste Disposal Trench							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	52.0 (U) - 53.0 (U)	5.0 (U)	11.0 (U)	5.0 (U)	11.0 (U)	10.0 (U)	340.0 (U) - 350 (U)	340.0 (U) - 350 (U)
17.5 - 20.0	52.0 (U)	5.0 (U)	11.0 (U)	5.0 (U)	11.0 (U)	2.0 (UJ)	340 (U)	340 (U)
20.0 - 22.5	70.0 (U)	5.0 (U)	11.0 (U)	5.0 (U)	11.0 (U)	3.0 (UJ)	340 (U)	340 (U)
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	46.0 (U)	5.0 (U)	10.0 (U)	5.0 (U)	10.0 (U)	1.0 (UJ)	340 (U)	340 (U)
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
116-B-2	Fuel Storage Basin Trench							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	17 (U)	5.0 (U)	11.0 (U)	5.0 (U)	11.0 (U)	2.0 (UJ)	340 (U)	340 (U)
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	11 (U)	5.0 (U)	11.0 (U)	5.0 (U)	11.0 (U)	2.0 (UJ)	350 (U)	350 (U)
20.0 - 22.5	NS	NS	NS	NS	NS	NS	NS	NS
22.5 - 25.0	110.0 (U) - 120 (U)	5.0 (U)	11.0 (U)	5.0 (U)	3.0 (J) - 11.0	52.0	340 (UJ) - 350 (UJ)	340 (UJ) - 350 (UJ)
Average	0.0	0.0	0.0	0.0	2.3	17.3	0.0	0.0
116-B-3	Pluto Crib							
0.0 - 10.0	45.0 (U)	1.0 (J)	10.0 (U)	10.0 (U)	10.0 (U)	8.0 (UJ)	20 (J) - 27 (J)	150 (J) - 160 (J)
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	40.0	6.0 (U) - 11.0 (U)	5.0 (J) - 11.0 (U)	6.0 (U) - 11.0 (U)	3.0 (J) - 11.0 (U)	6.0 (U) - 11.0 (U)	360 (U)	360 (U)
15.0 - 17.5	16.0 (U)	11.0 (U)	11.0 (U)	11.0 (U)	1.0 (J)	11.0 (U)	350 (UJ)	350 (UJ)
Average	6.7	0.7	0.4	0.0	2.5	0.0	15.7	103.3
116-B-5	Crib							
0.0 - 10.0	24.0 (U)	10.0 (U)	10.0 (U)	4.0 (J)	10.0 (U)	25.0	340 (UJ)	340 (UJ)
10.0 - 12.5	64.0 (UJ)	11.0 (U) - 53.0 (UJ)	11.0 (U) - 53.0 (UJ)	200.0 (J)	11.0 (U) - 53.0 (UJ)	77.0 (J)	350 (U)	350 (U)
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	17.0 (U)	10.0 (U)	10.0 (U)	10.0 (U)	10.0 (U)	10.0 (U)	340 (U)	340 (U)
Average	0.0	0.0	0.0	36.0	0.0	29.5	0.0	0.0

Summary of Investigation for 100-BC-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Semivolatile Organic Analysis continued: Benzo(a) pyrene (ug/kg)	Benzo(b) fluoranthene (ug/kg)	Benzo(k) fluoranthene (ug/kg)	Chrysene (ug/kg)	Fluoranthene (ug/kg)	N-Nitrosodiphenylamine (ug/kg)	Pentachlorophenol (ug/kg)
116-B-1	Liquid Waste Disposal Trench						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	340.0 (U) - 350 (U)	340.0 (U) - 350 (U)	340.0 (U) - 350 (U)	340.0 (U) - 350 (U)	340.0 (U) - 350 (U)	340.0 (U) - 350 (U)	1600.0 (UR) - 1700 (U)
17.5 - 20.0	340 (U)	340 (U)	340 (U)	340 (U)	340 (U)	340 (U)	1600 (UR)
20.0 - 22.5	340 (U)	340 (U)	340 (U)	340 (U)	340 (U)	340 (U)	1700 (U)
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	340 (U)	340 (U)	340 (U)	340 (U)	340 (U)	340 (U)	1600 (U)
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0
116-B-2	Fuel Storage Basin Trench						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	340 (U)	340 (U)	340 (U)	340 (U)	340 (U)	110 (J)	1700 (U)
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	350 (U)	350 (U)	350 (U)	350 (U)	350 (U)	350 (U)	1700 (U)
20.0 - 22.5	NS	NS	NS	NS	NS	NS	NS
22.5 - 25.0	340 (UJ) - 350 (UJ)	340 (UJ) - 350 (UJ)	340 (UJ) - 350 (UJ)	340 (UJ) - 350 (UJ)	340 (UJ) - 350 (UJ)	340 (UJ) - 350 (UJ)	1600 (UJ) - 1700 (UJ)
Average	0.0	0.0	0.0	0.0	0.0	36.7	0.0
116-B-3	Pluto Crib						
0.0 - 10.0	96 (J) - 97 (J)	89 (J) - 100 (J)	83 (J) - 130 (J)	150 (J) - 190 (J)	270 (J) - 310 (J)	330 (UJ) - 340 (U)	810 (UJ) - 820 (U)
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	360 (U)	360 (U)	360 (U)	360 (U)	360 (U)	360 (U)	860 (U) - 1800 (U)
15.0 - 17.5	350 (UJ)	350 (UJ)	350 (UJ)	350 (UJ)	350 (UJ)	350 (UJ)	840 (UJ)
Average	64.3	63.0	71.0	113.3	193.3	0.0	0.0
116-B-5	Crib						
0.0 - 10.0	340 (UJ)	340 (UJ)	340 (UJ)	340 (UJ)	340 (UJ)	340 (UJ)	820 (UJ)
10.0 - 12.5	350 (U)	350 (U)	350 (U)	350 (U)	350 (U)	350 (U)	840 (U)
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	340 (U)	340 (U)	340 (U)	340 (U)	340 (U)	340 (U)	830 (U)
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Summary of Investigation for 100-BC-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Semivolatile Organic Analysis continued: Phenanthrene (ug/kg)	Pyrene (ug/kg)	Comments
116-B-1	Liquid Waste Disposal Trench		
0.0 - 10.0	NS	NS	
10.0 - 12.5	NS	NS	
12.5 - 15.0	NS	NS	
15.0 - 17.5	340.0 (U) - 350 (U)	340.0 (U) - 350 (U)	
17.5 - 20.0	340 (U)	340 (U)	
20.0 - 22.5	340 (U)	340 (U)	
22.5 - 25.0	NS	NS	
25.0 - 27.5	340 (U)	340 (U)	
Average	0.0	0.0	
116-B-2	Fuel Storage Basin Trench		
0.0 - 10.0	NS	NS	
10.0 - 12.5	340 (U)	39 (J)	
12.5 - 15.0	NS	NS	
15.0 - 17.5	NS	NS	
17.5 - 20.0	350 (U)	350 (U)	
20.0 - 22.5	NS	NS	
22.5 - 25.0	340 (UJ) - 350 (UJ)	340 (UJ) - 350 (UJ)	
Average	0.0	13.0	
116-B-3	Pluto Crib		
0.0 - 10.0	100 (J) - 120 (J)	220 (UJ) - 330 (UJ)	
10.0 - 12.5	NS	NS	
12.5 - 15.0	360 (U)	360 (U)	
15.0 - 17.5	350 (UJ)	350 (UJ)	
Average	73.3	0.0	
116-B-5	Crib		
0.0 - 10.0	340 (UJ)	340 (UJ)	
10.0 - 12.5	350 (U)	350 (U)	
12.5 - 15.0	NS	NS	
15.0 - 17.5	340 (U)	340 (U)	
Average	0.0	0.0	

Summary of Investigation for 100-BC-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Volatile Organic Analysis						Semivolatile Organic Analysis	
	Acetone (ug/kg)	Benzene (ug/kg)	2-Butanone (ug/kg)	Carbon-disulfide (ug/kg)	4-Methyl-2-Pentanone (ug/kg)	Toluene (ug/kg)	Anthracene (ug/kg)	Benzo(a) anthracene (ug/kg)
116-C-5	Retention Basin - Test Pit (in area contaminated by leakage from west basin)							
0.0 - 10.0	10.0 (U)	10.0 (U)	10.0 (U)	10.0 (U)	10.0 (U)	2.0 (UJ)	360 (U)	360 (U)
10.0 - 12.5	13.0 (U)	11.0 (U)	11.0 (U)	11.0 (U)	11.0 (U)	1.0 (UJ)	370 (U)	370 (U)
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	9.0 (UJ)	11.0 (U)	11.0 (U)	11.0 (U)	11.0 (U)	1.0 (UJ)	360 (U)	360 (U)
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	11.0 (U) - 14.0 (U)	6.0 (U) - 11.0 (U)	11.0 (U)	6.0 (U) - 11.0 (U)	11.0 (U)	1.0 (UJ) - 6.0 (UJ)	340 (U) - 360 (U)	340 (U) - 360 (U)
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
116-C-5	Retention Basin - sludge samples from inside basins							
East Basin	23.0 (U) - 24.0 (U)	6.0 (U)	11.0 (U)	6.0 (U)	11.0 (U)	2.0 (UJ) - 4.0 (UJ)	360 (UJ) - 380 (UJ)	77 (J) - 380 (U)
West Basin	11.0 (U) - 48.0 (U)	6.0 (U) - 12.0 (U)	5.0 (J) - 12.0 (U)	11.0 (U) - 12.0 (U)	6.0 (U) - 12.0 (U)	2.0 (UJ) - 12.0 (U)	370 (U)	370 (U)
Average	0.0	0.0	1.3	0.0	0.0	0.0	0.0	19.3
116-C-1	Liquid Waste Disposal Trench							
116-B-11	Retention Basin							
116-B-7	Outfall Structure							
132-6	Outfall Structure							
132-C-2	Outfall Structure							
116-B-13/14	Sludge Burial Trenches							
116-B-6A	Crib							
116-B-6B	Crib							
116-B-4	Dummy Decontamination French Drain							
116-B-9	French Drain							
116-B-10	Dry Well							
116-B-12	Crib							
118-B-5	Ball 3X Burial Ground							
118-B-7	Solid Waste Burial Ground							
118-B-4/5	Filter Building, Gas Recirculation, Building, and Tunnels							
118-B-10	Solid Waste Burial Ground							
118-B-10	Burn Pit							
128-B-3	Burn Pit							
125-B-2	Clearwells							

Summary of Investigation for 100-BC-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Semivolatile Organic Analysis continued: Benzo(a) pyrene (ug/kg)	Benzo(b) fluoranthene (ug/kg)	Benzo(k) fluoranthene (ug/kg)	Chrysene (ug/kg)	Fluoran-thene (ug/kg)	N-Nitrosodi-phenylamine (ug/kg)	Pentachloro-phenol (ug/kg)
116-C-5	Retention Basin						
0.0 - 10.0	360 (U)	360 (U)	360 (U)	360 (U)	360 (U)	360 (U)	860 (U)
10.0 - 12.5	370 (U)	370 (U)	370 (U)	370 (U)	370 (U)	370 (U)	890 (U)
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	360 (U)	360 (U)	360 (U)	360 (U)	360 (U)	360 (U)	880 (U)
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	340 (U) - 360 (U)	340 (U) - 360 (U)	340 (U) - 360 (U)	340 (U) - 360 (U)	340 (U) - 360 (U)	340 (U) - 360 (U)	860 (U) - 1700 (U)
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0
116-C-5	Retention Basin						
East Basin	360 (UJ) - 380 (UJ)	54 (J) - 100 (J)	44 (J) - 100 (J)	100 (J) - 380 (U)	67 (J) - 380 (U)	360 (UJ) - 380 (UJ)	770 (J) - 1800 (UJ)
West Basin	370 (U)	370 (U)	42 (J) - 370 (U)	370 (U)	46 (J) - 370 (U)	370 (U)	370 (U)
Average	0.0	38.5	42.5	25.0	28.3	0.0	192.5
116-C-1	Liquid Waste Disposal Trench						
116-B-11	Retention Basin						
116-B-7	Outfall Structure						
132-6	Outfall Structure						
132-C-2	Outfall Structure						
116-B-13/14	Sludge Burial Trenches						
116-B-6A	Crib						
116-B-6B	Crib						
116-B-4	Dummy Decontamination French Drain						
116-B-9	French Drain						
116-B-10	Dry Well						
116-B-12	Crib						
118-B-5	Ball 3X Burial Ground						
118-B-7	Solid Waste Burial Ground						
118-B-4/5	Filter Building, Gas Recirculation, Building, and Tunnels						
118-B-10	Solid Waste Burial Ground						
118-B-10	Burn Pit						
128-B-3	Burn Pit						
125-B-2	Clearwells						

Summary of Investigation for 100-BC-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Semivolatile Organic Analysis continued: Phenanthrene (µg/kg)	Pyrene (ug/kg)	Comments
116-C-5	Retention Basin		
0.0 - 10.0	360 (U)	360 (U)	
10.0 - 12.5	370 (U)	370 (U)	
12.5 - 15.0	NS	NS	
15.0 - 17.5	360 (U)	360 (U)	
17.5 - 20.0	NS	NS	
20.0 - 22.5	340 (U) - 360 (U)	340 (U) - 360 (U)	
Average	0.0	0.0	
116-C-5	Retention Basin		
East Basin	360 (UJ) - 380 (UJ)	65 (UJ) - 380 (UJ)	
West Basin	890 (UJ) - 1800 (UJ)	52 (UJ) - 370 (UJ)	
Average	0.0	0.0	
116-C-1	Liquid Waste Disposal Trench		No LFI Investigation
116-B-11	Retention Basin		No LFI Investigation
116-B-7	Outfall Structure		No LFI Investigation
132-6	Outfall Structure		No LFI Investigation
132-C-2	Outfall Structure		No LFI Investigation
116-B-13/14	Sludge Burial Trenches		No LFI Investigation
116-B-6A	Crib		No LFI Investigation
116-B-6B	Crib		No LFI Investigation
116-B-4	Dummy Decontamination French Drain		No LFI Investigation
116-B-9	French Drain		No LFI Investigation
116-B-10	Dry Well		No LFI Investigation
116-B-12	Crib		No LFI Investigation
118-B-5	Ball 3X Burial Ground		No LFI Investigation
118-B-7	Solid Waste Burial Ground		No LFI Investigation
118-B-4/5	Filter Building, Gas Recirculation, Building, and Tunnels		No LFI Investigation
118-B-10	Solid Waste Burial Ground		No LFI Investigation
118-B-10	Burn Pit		No LFI Investigation
128-B-3	Burn Pit		No LFI Investigation
125-B-2	Clearwells		No LFI Investigation

Summary of Investigation for 100-DR-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Volatile Organic Analysis						Semi-Volatile Organic Analysis	
	Acetone (ug/kg)	2-Butanone (ug/kg)	4-Methyl-2-Pentanone (ug/kg)	Methylene Chloride (ug/kg)	Toluene (ug/kg)	Trichloroethene (ug/kg)	Anthracene (ug/kg)	Aroclor 1260 (ug/kg)
116-D-1A	Trench							
0.0 - 10.0	18.0 (U) - 20.0 (U)	10.0 (U)	10.0 (U)	15.0 (U) - 16.0 (U)	1.0 (U) - 5.0 (U)	5.0 (U)	340.0 (U) - 350.0 (U)	160.0 (UJ) - 170.0 (UJ)
10.0 - 15.0	18.0 (U)	10.0 (U)	10.0 (U)	15.0 (U)	5.0 (U)	5.0 (U)	350.0 (U) - 360.0 (U)	170.0 (UJ) - 170.0 (U)
15.0 - 20.0	6.0 (U)	11.0 (U)	11.0 (U)	6.0 (U)	6.0 (U)	6.0 (U)	350.0 (U)	170.0 (U)
20.0 - 25.0	10.0 (U)	11.0 (U)	11.0 (U)	6.0 (U)	6.0 (U)	6.0 (U)	350.0 (U)	170.0 (U)
25.0 - 30.0	10.0 (U) - 11.0 (U)	11.0 (U)	11.0 (U)	6.0 (U)	6.0 (U)	6.0 (U)	350.0 (U)	170.0 (U)
30.0 - 35.0	6.0 (U)	11.0 (U)	6.0 (U)	6.0 (U)	6.0 (U)	6.0 (U)	350.0 (U) - 360.0 (U)	170.0 (U)
35.0 - 40.0	NS	NS	NS	NS	NS	NS	NS	NS
40.0 - 45.0	18.0 (U) - 24.0 (U)	10.0 (U) - 11.0 (U)	5.0 (U) - 6.0 (U)	6.0 (U)	5.0 (U) - 6.0 (U)	5.0 (U) - 6.0 (U)	350.0 (U) - 360.0 (U)	170.0 (U)
45.0 - 50.0	24.0 (U)	10.0 (U)	5.0 (U)	6.0 (U)	5.0 (U)	5.0 (U)	NS	NS
50.0 - 55.0	36.0 (J)	11.0 (UJ)	11.0 (U)	10.0 (J)	6.0 (U)	6.0 (U)	350.0 (U)	150.0 (UJ)
Average	3.6	0.0	0.0	1.0	0.0	0.0	0.0	0.0
116-D-1B	Trench							
0.0 - 10.0	10.0 (U) - 12.0 (U)	10.0 (U)	10.0 (U)	10.0 (U)	5.0 (U)	5.0 (U)	340.0 (UJ)	160.0 (U)
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	14.0 (U)	11.0 (U)	6.0 (U)	6.0 (U)	6.0 (U)	6.0 (U)	350.0 (U)	170.0 (U)
15.0 - 17.5	12.0 (U) - 14.0 (U)	10.0 (U) - 11.0 (U)	5.0 (U) - 6.0 (U)	6.0 (U)	5.0 (U) - 6.0 (U)	5.0 (U) - 6.0 (U)	340.0 (U) - 350.0 (U)	170.0 (U)
17.5 - 20.0	12.0 (U)	10.0 (U)	5.0 (U)	6.0 (U)	5.0 (U)	5.0 (U)	340.0 (U)	SNL
20.0 - 22.5	NS	NS	NS	NS	NS	NS	NS	NS
22.5 - 25.0	26.0 (J)	10.0 (UJ)	10.0 (U)	7.0 (J)	5.0 (U)	5.0 (U)	340.0 (UJ)	160.0 (UJ)
25.0 - 27.5	26.0 (J)	10.0 (UJ)	10.0 (U)	7.0 (J)	5.0 (U)	5.0 (U)	340.0 (UJ)	160.0 (UJ)
27.5 - 30.0	41.0 (J) - 50.0 (UJ)	11.0 (UJ)	11.0 (U)	11.0 (UJ) - 11.0 (J)	1.0 (J) - 6.0 (UJ)	6.0 (U)	350.0 (U)	160.0 (UJ)
30.0 - 32.5	41.0 (J) - 50.0 (UJ)	11.0 (UJ)	11.0 (U)	11.0 (UJ) - 11.0 (J)	1.0 (J) - 6.0 (UJ)	6.0 (U)	350.0 (U)	160.0 (UJ)
32.5 - 35.0	63.0 (UJ)	11.0 (UJ)	11.0 (U)	23.0 (UJ)	6.0 (U)	6.0 (U)	340.0 (U)	160.0 (U)
35.0- 37.5	63.0 (UJ)	11.0 (UJ)	11.0 (U)	23.0 (UJ)	6.0 (U)	6.0 (U)	340.0 (U)	160.0 (U)
Average	7.2	0.0	0.0	1.9	0.1	0.0	0.0	0.0
116-D-6	French Drain							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	27.0 (J)	11.0 (U)	11.0 (U)	13.0 (UJ)	2.0 (J)	6.0 (U)	370.0 (U)	170.0 (U)
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	17.0 (UJ)	11.0 (UJ)	11.0 (UJ)	10.0 (UJ)	2.0 (J)	6.0 (U)	360.0 (U)	170.0 (U)
Average	13.5	0.0	0.0	0.0	2.0	0.0	0.0	0.0

Summary of Investigation for 100-DR-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Semi-Volatile Organic Analysis continued						
	Benzo(a) anthracene (ug/kg)	Benzo(a) pyrene (ug/kg)	Benzo(b) fluoranthene (ug/kg)	Benzo(k) fluoranthene (ug/kg)	Benzo(ghi) perylene (ug/kg)	Benzoic Acid (ug/kg)	bis(2-ethyl hexyl) phthalate (ug/kg)
116-D-1A	Trench						
0.0 - 10.0	340.0 (U) - 350.0 (U)	340.0 (U) - 350.0 (U)	340.0 (U) - 350.0 (U)	340.0 (U) - 350.0 (U)	340.0 (U) - 350.0 (UJ)	1700.0 (UJ) - 1800.0 (UJ)	340.0 (U) - 48.0 (J)
10.0 - 15.0	350.0 (U) - 360.0 (U)	350.0 (U) - 360.0 (U)	350.0 (U) - 360.0 (U)	350.0 (U) - 360.0 (U)	350.0 (U) - 360.0 (U)	1800.0 (U)	48.0 (J) - 360.0 (U)
15.0 - 20.0	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	1800.0 (U)	37.0 (J)
20.0 - 25.0	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	1800.0 (U)	350.0 (J)
25.0 - 30.0	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	1700.0 (U) - 1800.0 (U)	350.0 (J)
30.0 - 35.0	350.0 (U) - 360.0 (U)	350.0 (U) - 360.0 (U)	350.0 (U) - 360.0 (U)	350.0 (U) - 360.0 (U)	350.0 (U) - 360.0 (U)	1800.0 (U)	350.0 (U) - 360.0 (U)
35.0 - 40.0	NS	NS	NS	NS	NS	NS	NS
40.0 - 45.0	350.0 (U) - 360.0 (U)	350.0 (U) - 360.0 (U)	350.0 (U) - 360.0 (U)	350.0 (U) - 360.0 (U)	350.0 (U) - 360.0 (U)	1700.0 (U) - 1800.0 (U)	350.0 (U) - 360.0 (U)
45.0 - 50.0	NS	NS	NS	NS	NS	NS	NS
50.0 - 55.0	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	1700.0 (U)	350.0 (U)
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0
116-D-1B	Trench						
0.0 - 10.0	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	1700.0 (UJ)	340.0 (UJ)
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	1700.0 (U)	350.0 (U)
15.0 - 17.5	340.0 (U) - 350.0 (U)	340.0 (U) - 350.0 (U)	340.0 (U) - 350.0 (U)	340.0 (U) - 350.0 (U)	340.0 (U) - 350.0 (U)	1700.0 (U)	340.0 (U) - 350.0 (U)
17.5 - 20.0	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	1700.0 (U)	340.0 (U)
20.0 - 22.5	NS	NS	NS	NS	NS	NS	NS
22.5 - 25.0	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	1700.0 (UJ)	340.0 (UJ)
25.0 - 27.5	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	1700.0 (UJ)	340.0 (UJ)
27.5 - 30.0	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	1700.0 (U)	350.0 (U)
30.0 - 32.5	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	1700.0 (U)	350.0 (U)
32.5 - 35.0	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	1700.0 (U)	340.0 (U)
35.0 - 37.5	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	1700.0 (U)	340.0 (U)
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0
116-D-6	French Drain						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	370.0 (U)	370.0 (U)	59.0 (J)	370.0 (U)	370.0 (U)	1700.0 (U)	370.0 (U)
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	360.0 (U)	360.0 (U)	360.0 (U)	360.0 (U)	360.0 (U)	1800.0 (U)	360.0 (U)
Average	0.0	0.0	29.5	0.0	0.0	0.0	0.0

Summary of Investigation for 100-DR-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Semi-Volatile Organic Analysis continued: Butyl-benzylphthalate (ug/kg)	Carbazole (ug/kg)	4-chloro-3-methylphenol (ug/kg)	2 Chlorophenol (ug/kg)	Chrysene (ug/kg)	Di-n-butyl phthalate (ug/kg)	Di-n-octyl phthalate (ug/kg)
116-D-1A	Trench						
0.0 - 10.0	340.0 (U) - 350.0 (U)	NR	340.0 (U) - 350.0 (U)	340.0 (U) - 350.0 (U)	340.0 (U) - 350.0 (U)	340.0 (U) - 350.0 (U)	340.0 (U) - 350.0 (U)
10.0 - 15.0	350.0 (U) - 360.0 (U)	NR	350.0 (U) - 360.0 (U)	350.0 (U) - 360.0 (U)	350.0 (U) - 360.0 (U)	77.0 (J) - 360.0 (U)	350.0 (U) - 360.0 (U)
15.0 - 20.0	350.0 (U)	NR	350.0 (UJ)	350.0 (U)	350.0 (U)	51.0 (J)	350.0 (U)
20.0 - 25.0	350.0 (U)	NR	350.0 (UJ)	350.0 (U)	350.0 (U)	340.0 (J)	350.0 (U)
25.0 - 30.0	350.0 (U)	NR	350.0 (UJ)	350.0 (U)	350.0 (U)	35.0 (J) - 340.0 (J)	350.0 (U)
30.0 - 35.0	350.0 (U) - 360.0 (U)	350.0 (U) - 360.0 (U)	350.0 (U) - 360.0 (U)	350.0 (U) - 360.0 (U)	350.0 (U) - 360.0 (U)	53.0 (U) - 610.0 (U)	350.0 (U) - 360.0 (U)
35.0 - 40.0	NS	NS	NS	NS	NS	NS	NS
40.0 - 45.0	350.0 (U) - 360.0 (U)	350.0 (U) - 360.0 (U)	350.0 (U) - 360.0 (U)	350.0 (U) - 360.0 (U)	350.0 (U) - 360.0 (U)	40.0 (U) - 89.0 (U)	350.0 (U) - 360.0 (U)
45.0 - 50.0	NS	NS	NS	NS	NS	NS	NS
50.0 - 55.0	690.0 (U)	52.0 (J)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0
116-D-1B	Trench						
0.0 - 10.0	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	63.0 (U)	350.0 (U)
15.0 - 17.5	340.0 (U) - 350.0 (U)	340.0 (U) - 350.0 (U)	340.0 (U) - 350.0 (U)	340.0 (U) - 350.0 (U)	340.0 (U) - 350.0 (U)	35.0 (J) - 63.0 (U)	340.0 (U) - 350.0 (U)
17.5 - 20.0	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	35.0 (J)	340.0 (U)
20.0 - 22.5	NS	NS	NS	NS	NS	NS	NS
22.5 - 25.0	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	74.0 (UJ)	340.0 (UJ)
25.0 - 27.5	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	74.0 (UJ)	340.0 (UJ)
27.5 - 30.0	690.0 (U)	54.0 (J)	350.0 (U)	350.0 (U)	58.0 (J)	350.0 (U)	350.0 (U)
30.0 - 32.5	690.0 (U)	54.0 (J)	350.0 (U)	350.0 (U)	58.0 (J)	350.0 (U)	350.0 (U)
32.5 - 35.0	680.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)
35.0- 37.5	680.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)
Average	0.0	8.3	0.0	0.0	8.9	4.0	0.0
116-D-6	French Drain						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	370.0 (U)	370.0 (U)	370.0 (U)	370.0 (U)	62.0 (J)	370.0 (U)	38.0 (J)
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	360.0 (U)	360.0 (U)	360.0 (U)	360.0 (U)	360.0 (U)	360.0 (U)	360.0 (U)
Average	0.0	0.0	0.0	0.0	31.0	0.0	19.0

Summary of Investigation for 100-DR-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	1,3 Dichloro-benzene (ug/kg)	1,4 Dichloro-benzene (ug/kg)	Diethyl phthalate (ug/kg)	Fluoran-thene (ug/kg)	Fluorene (ug/kg)	Indeno(1,2,3-cd) pyrene (ug/kg)	2-Nitro-phenol (ug/kg)
	Semi-Volatile Organic Analysis continued						
116-D-1A	Trench						
0.0 - 10.0	340.0 (U) - 350.0 (U)	340.0 (U) - 350.0 (U)	340.0 (U) - 350.0 (U)	340.0 (U) - 350.0 (U)	340.0 (U) - 350.0 (U)	340.0 (U) - 350.0 (U)	340.0 (U) - 350.0 (U)
10.0 - 15.0	350.0 (U) - 360.0 (U)	350.0 (U) - 360.0 (U)	350.0 (U)	350.0 (U) - 360.0 (U)	350.0 (U) - 360.0 (U)	350.0 (U) - 360.0 (U)	350.0 (U) - 360.0 (U)
15.0 - 20.0	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (UJ)
20.0 - 25.0	38.0 (J)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (UJ)
25.0 - 30.0	38.0 (J) - 350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (UJ)
30.0 - 35.0	350.0 (U) - 360.0 (U)	350.0 (U) - 360.0 (U)	350.0 (U) - 360.0 (U)	350.0 (U) - 360.0 (U)	350.0 (U) - 360.0 (U)	350.0 (U) - 360.0 (U)	350.0 (U) - 360.0 (U)
35.0 - 40.0	NS	NS	NS	NS	NS	NS	NS
40.0 - 45.0	350.0 (U) - 360.0 (U)	350.0 (U) - 360.0 (U)	350.0 (U) - 360.0 (U)	350.0 (U) - 360.0 (U)	350.0 (U) - 360.0 (U)	350.0 (U) - 360.0 (U)	350.0 (U) - 360.0 (U)
45.0 - 50.0	NS	NS	NS	NS	NS	NS	NS
50.0 - 55.0	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0
116-D-1B	Trench						
0.0 - 10.0	340.0 (UJ)	340.0 (UJ)	91.0 (UJ)	340.0 (UJ)	1700.0 (UJ)	340.0 (UJ)	340.0 (UJ)
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)
15.0 - 17.5	340.0 (U) - 350.0 (U)	340.0 (U) - 350.0 (U)	340.0 (U) - 350.0 (U)	340.0 (U) - 350.0 (U)	340.0 (U) - 350.0 (U)	340.0 (U) - 350.0 (U)	340.0 (U) - 350.0 (U)
17.5 - 20.0	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)
20.0 - 22.5	NS	NS	NS	NS	NS	NS	NS
22.5 - 25.0	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)
25.0 - 27.5	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)
27.5 - 30.0	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)
30.0 - 32.5	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)
32.5 - 35.0	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)
35.0 - 37.5	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0
116-D-6	French Drain						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	370.0 (U)	370.0 (U)	370.0 (U)	370.0 (U)	370.0 (U)	370.0 (U)	370.0 (U)
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	360.0 (U)	360.0 (U)	360.0 (U)	360.0 (U)	360.0 (U)	360.0 (U)	360.0 (U)
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Summary of Investigation for 100-DR-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Semi-Volatile Organic Analysis continued			Pesticides Analysis				
	Pentachloro-phenol (ug/kg)	Phenol (ug/kg)	Pyrene (ug/kg)	Aldrin (ug/kg)	Beta-BHC (ug/kg)	Dieldrin (ug/kg)	Endrin (ug/kg)	Heptachlor (ug/kg)
116-D-1A	Trench							
0.0 - 10.0	1700.0 (U) - 1800.0 (U)	340.0 (U) - 350.0 (U)	340.0 (U) - 350.0 (U)	8.1 (UJ) - 8.5 (UJ)	8.1 (UJ) - 8.5 (UJ)	16.0 (UJ) - 17.0 (UJ)	16.0 (UJ) - 17.0 (UJ)	8.1 (UJ) - 8.5 (UJ)
10.0 - 15.0	1800.0 (U)	350.0 (U) - 360.0 (U)	350.0 (U) - 360.0 (U)	8.5 (UJ) - 8.5 (UJ)	8.5 (UJ) - 8.5 (U)	17.0 (UJ) - 17.0 (U)	17.0 (UJ) - 17.0 (U)	8.5 (UJ) - 8.5 (U)
15.0 - 20.0	1800.0 (UJ)	350.0 (UJ)	350.0 (U)	8.5 (U)	8.5 (U)	17.0 (U)	17.0 (U)	8.5 (U)
20.0 - 25.0	1800.0 (UJ)	140.0 (UJ)	350.0 (U)	8.3 (U)	8.3 (U)	17.0 (U)	17.0 (U)	8.3 (U)
25.0 - 30.0	1700.0 (UJ) - 1800.0 (UJ)	140.0 (UJ) - 350.0 (UJ)	350.0 (U)	8.3 (U) - 8.4 (U)	8.3 (U) - 8.4 (U)	17.0 (U)	17.0 (U)	8.3 (U) - 8.4 (U)
30.0 - 35.0	1800.0 (UJ)	350.0 (U) - 360.0 (U)	350.0 (U) - 360.0 (U)	8.6 (U) - 43.0 (U)	7.8 (J) - 8.6 (U)	17.0 (U) - 21.0 (J)	17.0 (U) - 85.0 (U)	8.6 (U) - 43.0 (U)
35.0 - 40.0	NS	NS	NS	NS	NS	NS	NS	NS
40.0 - 45.0	1700.0 (UJ) - 1800.0 (UJ)	350.0 (U) - 360.0 (U)	350.0 (U) - 360.0 (U)	8.4 (U) - 8.5 (U)	8.4 (U) - 8.5 (U)	17.0 (U)	17.0 (U)	8.4 (U) - 8.5 (U)
45.0 - 50.0	NS	NS	NS	NS	NS	NS	NS	NS
50.0 - 55.0	1700.0 (U)	350.0 (U)	350.0 (U)	7.7 (UJ)	7.7 (UJ)	15.0 (UJ)	15.0 (UJ)	7.7 (UJ)
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
116-D-1B	Trench							
0.0 - 10.0	1700.0 (UJ)	340.0 (UJ)	340.0 (UJ)	7.5 (U)	7.9 (U)	16.0 (U)	16.0 (U)	7.9 (U)
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	1700.0 (U)	350.0 (U)	350.0 (U)	8.5 (U)	8.5 (U)	17.0 (U)	17.0 (U)	8.5 (U)
15.0 - 17.5	1700.0 (U)	340.0 (U) - 350.0 (U)	340.0 (U) - 350.0 (U)	8.5 (U)	8.5 (U)	17.0 (U)	17.0 (U)	8.5 (U)
17.5 - 20.0	1700.0 (U)	340.0 (U)	340.0 (U)	SNL	SNL	SNL	SNL	SNL
20.0 - 22.5	NS	NS	NS	NS	NS	NS	NS	NS
22.5 - 25.0	1700.0 (UJ)	340.0 (UJ)	340.0 (UJ)	8.2 (UJ)	8.2 (UJ)	16.0 (UJ)	16.0 (UJ)	8.2 (UJ)
25.0 - 27.5	1700.0 (UJ)	340.0 (UJ)	340.0 (UJ)	8.2 (UJ)	8.2 (UJ)	16.0 (UJ)	16.0 (UJ)	8.2 (UJ)
27.5 - 30.0	1700.0 (U)	350.0 (U)	350.0 (U)	8.0 (UJ)	8.0 (UJ)	16.0 (UJ)	16.0 (UJ)	8.0 (UJ)
30.0 - 32.5	1700.0 (U)	350.0 (U)	350.0 (U)	8.0 (UJ)	8.0 (UJ)	16.0 (UJ)	16.0 (UJ)	8.0 (UJ)
32.5 - 35.0	1700.0 (U)	340.0 (U)	340.0 (U)	8.0 (UJ)	8.0 (U)	16.0 (UJ)	16.0 (UJ)	8.0 (U)
35.0- 37.5	1700.0 (U)	340.0 (U)	340.0 (U)	8.0 (UJ)	8.0 (U)	16.0 (UJ)	16.0 (UJ)	8.0 (U)
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
116-D-6	French Drain							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	1800.0 (UJ)	370.0 (U)	370.0 (U)	8.6 (U)	8.6 (U)	17.0 (U)	17.0 (UJ)	8.6 (UJ)
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	1800.0 (UJ)	360.0 (U)	360.0 (U)	8.6 (U)	8.6 (U)	17.0 (U)	17.0 (UJ)	8.6 (UJ)
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Summary of Investigation for 100-DR-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	2,4-D (ug/kg)	Comments
116-D-1A	Trench	
0.0 - 10.0	NS	
10.0 - 15.0	NS	
15.0 - 20.0	NS	
20.0 - 25.0	NS	
25.0 - 30.0	NS	
30.0 - 35.0	NS	
35.0 - 40.0	NS	
40.0 - 45.0	NS	
45.0 - 50.0	NS	
50.0 - 55.0	NS	
Average	NS	
116-D-1B	Trench	
0.0 - 10.0	NS	Note: Some of the data for sample DO18D7 were missing qualifiers (ranges 15.0 - 17.5 and 17.5 - 20.0)
10.0 - 12.5	NS	
12.5 - 15.0	NS	
15.0 - 17.5	NS	
17.5 - 20.0	NS	
20.0 - 22.5	NS	
22.5 - 25.0	NS	
25.0 - 27.5	NS	
27.5 - 30.0	NS	
30.0 - 32.5	NS	
32.5 - 35.0	NS	
35.0- 37.5	NS	
Average	0.0	
116-D-6	French Drain	
0.0 - 10.0	NS	
10.0 - 12.5	NS	
12.5 - 15.0	NS	
15.0 - 17.5	NS	
17.5 - 20.0	NS	
20.0 - 22.5	NS	
Average	0.0	

Summary of Investigation for 100-DR-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Volatile Organic Analysis						Semi-Volatile Organic Analysis	
	Acetone (ug/kg)	2-Butanone (ug/kg)	4-Methyl-2-Pentanone (ug/kg)	Methylene Chloride (ug/kg)	Toluene (ug/kg)	Trichloroethene (ug/kg)	Anthracene (ug/kg)	Aroclor 1260 (ug/kg)
116-D-7	Retention Basin							
0.0 - 10.0	25.0 (U)	10.0 (UJ)	10.0 (U)	12.0 (U)	5.0 (U)	5.0 (U)	340.0 (UJ)	8.2 (UJ)
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	NS	NS	NS	NS	NS	NS	NS	NS
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	NS	NS	NS	NS	NS	NS	NS	NS
27.5 - 30.0	35.0 (U)	11.0 (U)	11.0 (U)	10.0 (U)	6.0 (U)	6.0 (U)	330.0 (U)	170.0 (U)
30.0 - 32.5	35.0 (U)	11.0 (U)	11.0 (U)	10.0 (U)	6.0 (U)	6.0 (U)	330.0 (U)	170.0 (U)
32.5 - 35.0	32.0 (U)	10.0 (U)	10.0 (U)	10.0 (U)	5.0 (U)	5.0 (U)	330.0 (U)	170.0 (U)
35.0 - 37.5	32.0 (U)	10.0 (U)	10.0 (U)	10.0 (U)	5.0 (U)	5.0 (U)	330.0 (U)	170.0 (U)
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
116-DR-9	Process Effluent Retention Basin							
0.0 - 5.0	12.0 (UJ) - 27.0 (U)	11.0 (U)	11.0 (U)	11.0 (U)	3.0 (J) - 6.0 (U)	6.0 (U) - 6.0	150.0 (J) - 370.0 (U)	19.0 (UJ) - 160.0 (U)
5.0 - 10.0	32.0 (U) - 55.0 (J)	10.0 (U)	10.0 (U)	4.0 (J) - 12.0 (U)	1.0 (J) - 5.0 (U)	5.0 (U)	340.0 (U) - 370.0 (U)	160.0 (U) - 170.0 (U)
10.0 - 12.5	32.0 (U) - 55.0 (J)	10.0 (U)	10.0 (U)	4.0 (J) - 12.0 (U)	1.0 (J) - 5.0 (U)	5.0 (U)	340.0 (U)	160.0 (U)
12.5 - 15.0	15.0 (U)	10.0 (U)	10.0 (U)	10.0 (U)	5.0 (U)	5.0 (U)	350.0 (U)	160.0 (U)
15.0 - 17.5	15.0 (U)	10.0 (U)	10.0 (U)	10.0 (U)	5.0 (U)	5.0 (U)	350.0 (U)	160.0 (U)
17.5 - 20.0	27.0 (U)	12.0 (U)	12.0 (U)	12.0 (U)	11.0	6.0 (U)	350.0 (U)	21.0 (J)
20.0 - 22.5	27.0 (U)	12.0 (U)	12.0 (U)	12.0 (U)	11.0	6.0 (U)	350.0 (U)	21.0 (J)
22.5 - 25.0	36.0 (U) - 59.0 (U)	10.0 (U)	11.0 (U)	11.0 (U)	1.0 (J)	6.0 (U)	350.0 (U)	170.0 (U)
25.0 - 27.5	36.0 (U) - 59.0 (U)	10.0 (U)	11.0 (U)	11.0 (U)	1.0 (J)	6.0 (U)	350.0 (U)	170.0 (U)
27.5 - 30.0	29.0 (U) - 47.0 (UJ)	10.0 (UJ)	10.0 (UJ)	10.0 (U)	5.0 (U)	3.0 (U)	340.0 (UJ) - 350.0 (U)	170.0 (U)
30.0 - 32.5	47.0 (UJ)	10.0 (UJ)	10.0 (UJ)	10.0 (U)	5.0 (U)	3.0 (U) - 5.0 (U)	340.0 (UJ) - 350.0 (U)	170.0 (U)
32.5 - 35.0	44.0 (UJ) - 27.0 (J)	10.0 (U)	5.0 (U) - 10.0 (U)	10.0 (U) - 16.0 (J)	4.0 (J) - 5.0 (U)	3.0 (U) - 5.0 (U)	340.0 (UJ)	170.0 (U)
35.0 - 37.5	44.0 (UJ) - 27.0 (J)	10.0 (U)	5.0 (U) - 10.0 (U)	10.0 (U) - 16.0 (J)	4.0 (J) - 5.0 (U)	3.0 (U) - 5.0 (U)	340.0 (UJ)	170.0 (U)
Average	7.3	0.0	0.0	1.5	2.2	0.4	10.0	2.8

Summary of Investigation for 100-DR-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Semi-Volatile Organic Analysis continued Benzo(a) anthracene (ug/kg)	Benzo(a) pyrene (ug/kg)	Benzo(b) fluoranthene (ug/kg)	Benzo(k) fluoranthene (ug/kg)	Benzo(ghi) perylene (ug/kg)	Benzoic Acid (ug/kg)	bis(2-ethyl hexyl) phthalate (ug/kg)
116-D-7	**Retention Basin**						
0.0 - 10.0	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	86.0 (UJ)	340.0 (UJ)
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	NS	NS	NS	NS	NS	NS	NS
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	NS	NS	NS	NS	NS	NS	NS
27.5 - 30.0	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	1700.0 (U)	330.0 (U)
30.0 - 32.5	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	1700.0 (U)	330.0 (U)
32.5 - 35.0	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	1600.0 (U)	330.0 (U)
35.0 - 37.5	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	1600.0 (U)	330.0 (U)
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0
116-DR-9	**Process Effluent Retention Basin**						
0.0 - 5.0	130.0 (J) - 370.0 (U)	110.0 (J) - 370.0 (U)	120.0 (J) - 370.0 (U)	95.0 (J) - 370.0 (U)	85.0 (J) - 370.0 (U)	1700.0 (U) - 1800.0 (U)	61.0 (J) - 370.0 (U)
5.0 - 10.0	340.0 (U) - 370.0 (U)	340.0 (U) - 370.0 (U)	340.0 (U) - 370.0 (U)	340.0 (U) - 370.0 (U)	340.0 (U) - 370.0 (U)	1700.0 (U) - 1800.0 (U)	61.0 (J) - 220.0 (J)
10.0 - 12.5	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	1700.0 (U)	77.0 (J) - 220.0 (J)
12.5 - 15.0	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	1700.0 (U)	2100.0 (U)
15.0 - 17.5	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	1700.0 (U)	2100.0 (U)
17.5 - 20.0	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	1800.0 (U)	350.0 (U)
20.0 - 22.5	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	1800.0 (U)	350.0 (U)
22.5 - 25.0	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	1800.0 (U)	350.0 (U)
25.0 - 27.5	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	1800.0 (U)	350.0 (U)
27.5 - 30.0	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	74.0 (J) - 1700.0 (U)	4800.0
30.0 - 32.5	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	74.0 (J) - 1700.0 (U)	4800.0
32.5 - 35.0	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	74.0 (J) - 1700.0 (U)	4800.0
35.0 - 37.5	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	1700.0 (U)	5200.0
Average	8.7	7.3	8.0	6.3	5.7	7.4	1339.4

Summary of Investigation for 100-DR-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Semi-Volatile Organic Analysis continued Butyl-benzylphthalate (ug/kg)	Carbazole (ug/kg)	4-chloro-3-methylphenol (ug/kg)	2 Chlorophenol (ug/kg)	Chrysene (ug/kg)	Di-n-butyl phthalate (ug/kg)	Di-n-octyl phthalate (ug/kg)
116-D-7	**Retention Basin**						
0.0- 10.0	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	NS	NS	NS	NS	NS	NS	NS
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	NS	NS	NS	NS	NS	NS	NS
27.5 - 30.0	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	89.0 (J)	330.0 (U)
30.0 - 32.5	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	89.0 (J)	330.0 (U)
32.5 - 35.0	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)
35.0 - 37.5	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)
Average	0.0	0.0	0.0	0.0	0.0	22.3	0.0
116-DR-9	**Process Effluent Retention Basin**						
0.0 - 5.0	36.0 (J) - 370.0 (U)	340.0 (U) - 370.0 (U)	340.0 (U) - 370.0 (U)	340.0 (U) - 370.0 (U)	140.0 (J) - 370.0 (U)	340.0 (U) - 2900.0	340.0 (U) - 370.0 (U)
5.0 - 10.0	36.0 (J) - 370.0 (U)	340.0 (U) - 370.0 (U)	340.0 (U) - 370.0 (U)	340.0 (U) - 370.0 (U)	340.0 (U) - 370.0 (U)	36.0 (J) - 2900.0	340.0 (U) - 370.0 (U)
10.0 - 12.5	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	36.0 (J)	340.0 (U)
12.5 - 15.0	1200.0	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	2200.0	350.0 (U)
15.0 - 17.5	1200.0	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	2200.0	350.0 (U)
17.5 - 20.0	430.0	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	2200.0	350.0 (U)
20.0 - 22.5	430.0	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	2200.0	350.0 (U)
22.5 - 25.0	130.0 (J) - 320.0 (J)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	2400.0 - 3500.0 (U)	350.0 (U)
25.0 - 27.5	130.0 (J) - 320.0 (J)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	2400.0 - 3500.0 (U)	350.0 (U)
27.5 - 30.0	82.0 (J) - 1900.0	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	1000.0 (J) - 2400.0	340.0 (UJ) - 350.0 (U)
30.0 - 32.5	82.0 (J) - 1900.0	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	1000.0 (J) - 2400.0	340.0 (UJ) - 350.0 (U)
32.5 - 35.0	1900.0 - 2200.0	340.0 (UJ)	340.0 (U)	340.0 (U)	340.0 (U)	1000.0 (J) - 2200.0 (J)	340.0 (U)
35.0 - 37.5	2200.0	340.0 (UJ)	340.0 (U)	340.0 (U)	340.0 (U)	2200.0 (UJ)	340.0 (U)
Average	667.6	0.0	0.0	0.0	9.3	1471.5	0.0

Summary of Investigation for 100-DR-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Semi-Volatile Organic Analysis continued: 1,3 Dichloro-benzene (ug/kg)	1,4 Dichloro-benzene (ug/kg)	Diethyl phthalate (ug/kg)	Fluoran-thene (ug/kg)	Fluorene (ug/kg)	Indeno(1,2,3-cd) pyrene (ug/kg)	2-Nitro-phenol (ug/kg)
116-D-7	Retention Basin						
0.0 - 10.0	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	NS	NS	NS	NS	NS	NS	NS
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	NS	NS	NS	NS	NS	NS	NS
27.5 - 30.0	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)
30.0 - 32.5	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)
32.5 - 35.0	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)
35.0 - 37.5	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0
116-DR-9	Process Effluent Retention Basin						
0.0 - 5.0	340.0 (U) - 370.0 (U)	340.0 (U) - 370.0 (U)	340.0 (U) - 370.0 (U)	240.0 (J) - 370.0 (U)	340.0 (U) - 370.0 (U)	76.0 (J) - 370.0 (U)	340.0 (U) - 350.0 (J)
5.0 - 10.0	340.0 (U) - 370.0 (U)	340.0 (U) - 370.0 (U)	340.0 (U) - 370.0 (U)	340.0 (U) - 370.0 (U)	340.0 (U) - 370.0 (U)	340.0 (U) - 370.0 (U)	340.0 (U) - 370.0 (U)
10.0 - 12.5	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)
12.5 - 15.0	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)
15.0 - 17.5	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)
17.5 - 20.0	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)
20.0 - 22.5	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)
22.5 - 25.0	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)
25.0 - 27.5	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)
27.5 - 30.0	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	34.0 (J) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)
30.0 - 32.5	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)
32.5 - 35.0	340.0 (U)	340.0 (U)	34.0 (J) - 340.0 (U)	340.0 (UJ)	340.0 (U)	340.0 (U)	340.0 (U)
35.0 - 37.5	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (U)
Average	0.0	0.0	2.3	16.0	0.0	5.1	23.3

Summary of Investigation for 100-DR-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Semi-Volatile Organic Analysis continued			Pesticides Analysis				
	Pentachloro-phenol (ug/kg)	Phenol (ug/kg)	Pyrene (ug/kg)	Aldrin (ug/kg)	Beta-BHC (ug/kg)	Dieldrin (ug/kg)	Endrin (ug/kg)	Heptachlor (ug/kg)
116-D-7	Retention Basin							
0.0 - 10.0	340.0 (UJ)	350.0 (J)	340.0 (UJ)	8.2 (UJ)	8.2 (UJ)	8.2 (UJ)	8.2 (UJ)	8.2 (UJ)
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	NS	NS	NS	NS	NS	NS	NS	NS
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	NS	NS	NS	NS	NS	NS	NS	NS
27.5 - 30.0	1700.0 (U)	330.0 (U)	330.0 (U)	8.5 (U)	8.5 (U)	17.0 (U)	17.0 (UJ)	8.5 (U)
30.0 - 32.5	1700.0 (U)	330.0 (U)	330.0 (U)	8.5 (U)	8.5 (U)	17.0 (U)	17.0 (UJ)	8.5 (U)
32.5 - 35.0	1600.0 (U)	330.0 (U)	330.0 (U)	8.3 (U)	8.3 (U)	17.0 (U)	17.0 (UJ)	8.3 (U)
35.0 - 37.5	1600.0 (U)	330.0 (U)	330.0 (U)	8.3 (U)	8.3 (U)	17.0 (U)	17.0 (UJ)	8.3 (U)
Average	0.0	43.8	0.0	0.0	0.0	0.0	0.0	0.0
116-DR-9	Process Effluent Retention Basin							
0.0 - 5.0	53.0 (J) - 1800.0 (U)	340.0 (U) - 370.0 (U)	240.0 (J) - 370.0 (U)	1.7 (UJ) - 8.6 (U)	8.1 (U) - 8.6 (U)	16.0 (U) - 17.0 (U)	16.0 (U) - 17.0 (U)	8.1 (U) - 8.6 (U)
5.0 - 10.0	1700.0 (U) - 1800.0 (U)	340.0 (U) - 370.0 (U)	38.0 (J) - 370.0 (U)	8.3 (UJ) - 8.4 (UJ)	8.3 (U) - 8.4 (U)	16.0 (U) - 17.0 (U)	16.0 (U) - 17.0 (U)	8.3 (U) - 8.4 (U)
10.0 - 12.5	1700.0 (U)	340.0 (U)	38.0 (J) - 340.0 (U)	8.3 (UJ)	8.3 (U)	16.0 (U)	16.0 (U)	8.3 (U)
12.5 - 15.0	1700.0 (U)	350.0 (U)	350.0 (U)	8.2 (U)	8.2 (U)	16.0 (U)	16.0 (U)	8.2 (U)
15.0 - 17.5	1700.0 (U)	350.0 (U)	350.0 (U)	8.2 (U)	8.2 (U)	16.0 (U)	16.0 (U)	8.2 (U)
17.5 - 20.0	1800.0 (U)	350.0 (U)	350.0 (U)	9.2 (U)	9.2 (U)	18.0 (U)	18.0 (U)	9.2 (U)
20.0 - 22.5	1800.0 (U)	350.0 (U)	350.0 (U)	9.2 (U)	9.2 (U)	18.0 (U)	18.0 (U)	9.2 (U)
22.5 - 25.0	56.0 (J) - 1800.0 (U)	350.0 (U)	350.0	8.4 (U) - 8.5 (U)	8.4 (U) - 8.5 (U)	17.0 (U)	17.0 (U)	8.4 (U) - 8.5 (U)
25.0 - 27.5	56.0 (J) - 1800.0 (U)	350.0 (U)	350.0	8.4 (U) - 8.5 (U)	8.4 (U) - 8.5 (U)	17.0 (U)	17.0 (U)	8.4 (U) - 8.5 (U)
27.5 - 30.0	1700.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	8.3 (U)	8.3 (U)	17.0 (U)	17.0 (U)	8.3 (U)
30.0 - 32.5	1700.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	8.3 (U)	8.3 (U)	17.0 (U)	17.0 (U)	8.3 (U)
32.5 - 35.0	1700.0 (U)	340.0 (U)	340.0 (U)	8.3 (U)	8.3 (U)	17.0 (U)	17.0 (U)	8.3 (U)
35.0 - 37.5	1700.0 (U)	340.0 (U)	340.0 (U)	8.3 (U)	8.3 (U)	17.0 (U)	17.0 (U)	8.3 (U)
Average	7.3	0.0	66.5	0.0	0.0	0.0	0.0	0.0

Summary of Investigation for 100-DR-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	2,4-D (ug/kg)	Comments
116-D-7	Retention Basin	
0.0 - 10.0	NS	
10.0 - 12.5	NS	
12.5 - 15.0	NS	
15.0 - 17.5	NS	
17.5 - 20.0	NS	
20.0 - 22.5	NS	
22.5 - 25.0	NS	
25.0 - 27.5	NS	
27.5 - 30.0	NS	
30.0 - 32.5	NS	
32.5 - 35.0	NS	
35.0 - 37.5	NS	
Average	0.0	
116-DR-9	Process Effluent Retention Basin	
0.0 - 5.0	NS	
5.0 - 10.0	NS	
10.0 - 12.5	NS	
12.5 - 15.0	NS	
15.0 - 17.5	NS	
17.5 - 20.0	NS	
20.0 - 22.5	NS	
22.5 - 25.0	NS	
25.0 - 27.5	NS	
27.5 - 30.0	NS	
30.0 - 32.5	NS	
32.5 - 35.0	NS	
35.0 - 37.5	NS	
Average	0.0	

Summary of Investigation for 100-DR-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Volatile Organic Analysis						Semi-Volatile Organic Analysis	
	Acetone (ug/kg)	2-Butanone (ug/kg)	4-Methyl-2-Pentanone (ug/kg)	Methylene Chloride (ug/kg)	Toluene (ug/kg)	Trichloroethene (ug/kg)	Anthracene (ug/kg)	Aroclor 1260 (ug/kg)
116-DR-1	Trench							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	13.0 (U)	13.0 (U)	13.0 (U)	3.0 (U)	3.0 (J)	6.0 (U)	430.0 (U)	38.0 (U)
15.0 - 17.5	13.0 (U)	13.0 (U)	13.0 (U)	3.0 (U)	3.0 (J)	6.0 (U)	430.0 (U)	38.0 (U)
17.5 - 20.0	13.0 (UJ)	13.0 (U)	13.0 (U)	1.0 (J)	6.0 (UJ)	6.0 (UJ)	350.0 (U)	170.0 (U)
20.0 - 22.5	13.0 (UJ)	13.0 (U)	13.0 (U)	1.0 (J)	6.0 (UJ)	6.0 (UJ)	350.0 (U)	170.0 (U)
22.5 - 25.0	36.0 (U) - 40.0 (U)	10.0 (U) - 11.0 (U)	3.0 (U) - 10.0 (U)	26.0 (U) - 30.0 (U)	5.0 (U) - 13.0 (U)	5.0 (U) - 6.0 (U)	350.0 (U)	160.0 (UJ) - 170.0 (UJ)
25.0 - 27.5	36.0 (U) - 40.0 (U)	10.0 (U) - 11.0 (U)	3.0 (U) - 10.0 (U)	26.0 (U) - 30.0 (U)	5.0 (U) - 13.0 (U)	5.0 (U) - 6.0 (U)	350.0 (U)	160.0 (UJ) - 170.0 (UJ)
27.5 - 30.0	32.0 (U)	10.0 (U)	10.0 (U)	27.0 (U)	5.0 (U)	5.0 (U)	350.0 (U)	170.0 (UJ)
30.0 - 32.5	32.0 (U)	10.0 (U)	10.0 (U)	27.0 (U)	5.0 (U)	5.0 (U)	350.0 (U)	170.0 (UJ)
Average	0.0	0.0	0.0	0.3	0.8	0.0	0.0	0.0
116-DR-2	Trench							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	10.0 (U)	12.0 (U)	12.0 (U)	2.0 (U)	6.0 (U)	6.0 (U)	1900.0 (U)	180.0 (U)
15.0 - 17.5	10.0 (U)	12.0 (U)	12.0 (U)	2.0 (U)	6.0 (U)	6.0 (U)	1900.0 (U)	180.0 (U)
17.5 - 20.0	10.0 (U)	10.0 (U)	10.0 (U)	5.0 (U)	5.0 (U)	5.0 (U)	340.0 (U)	170.0 (U)
20.0 - 22.5	10.0 (U)	10.0 (U)	10.0 (U)	5.0 (U)	5.0 (U)	5.0 (U)	340.0 (U)	170.0 (U)
22.5 - 25.0	10.0 (U) - 25.0 (U)	10.0 (U)	10.0 (U)	10.0 (U) - 26.0 (U)	5.0 (U)	5.0 (U)	340.0 (UJ) - 350.0 (U)	84.0 (U) - 170.0 (UJ)
25.0 - 27.5	10.0 (U) - 25.0 (U)	10.0 (U)	10.0 (U)	10.0 (U) - 26.0 (U)	5.0 (U)	5.0 (U)	340.0 (UJ) - 350.0 (U)	84.0 (U) - 170.0 (UJ)
27.5 - 30.0	NS	NS	NS	NS	NS	NS	NS	NS
30.0 - 32.5	10.0	10.0 (U)	10.0 (U)	9.0	5.0 (U)	5.0 (U)	340.0 (U)	170.0 (U)
32.5 - 35.0	NS	NS	NS	NS	NS	NS	NS	NS
35.0 - 37.5	22.0	10.0 (U)	10.0 (U)	8.0	5.0 (U)	5.0 (U)	340.0 (U)	160.0 (U)
Average	4.0	0.0	0.0	2.1	0.0	0.0	0.0	0.0
116-D-2	Pluto Crib							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	25.0 (U)	SNL	SNL	SNL	SNL	SNL	SNL	160.0 (U)
12.5 - 15.0	25.0 (U)	SNL	SNL	SNL	SNL	SNL	SNL	160.0 (U)
15.0 - 17.5	22.0 (U)	10.0 (U)	10.0 (U)	3.0 (J)	5.0 (U)	5.0 (U)	330.0 (UJ)	160.0 (U)
17.5 - 20.0	22.0 (U)	10.0 (U)	10.0 (U)	3.0 (J)	5.0 (U)	5.0 (U)	330.0 (UJ)	160.0 (U)
20.2 - 22.5	NS	NS	NS	NS	NS	NS	NS	NS
22.5 - 25.0	21.0 (UJ)	10.0 (U)	10.0 (U)	10.0 (UJ)	2.0 (J)	5.0 (U)	330.0 (UJ)	160.0 (U)
Average	0.0	0.0	0.0	2.0	0.7	0.0	0.0	0.0

Summary of Investigation for 100-DR-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Semi-Volatile Organic Analysis continued Benzo(a) anthracene (ug/kg)	Benzo(a) pyrene (ug/kg)	Benzo(b) fluoranthene (ug/kg)	Benzo(k) fluoranthene (ug/kg)	Benzo(ghi) perylene (ug/kg)	Benzoic Acid (ug/kg)	bis(2-ethyl hexyl) phthalate (ug/kg)
116-DR-1	Trench						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	430.0 (U)	430.0 (U)	430.0 (U)	430.0 (U)	430.0 (U)	2100.0 (U)	430.0 (U)
15.0 - 17.5	430.0 (U)	430.0 (U)	430.0 (U)	430.0 (U)	430.0 (U)	2100.0 (U)	430.0 (U)
17.5 - 20.0	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	1700.0 (U)	350.0 (U)
20.0 - 22.5	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	1700.0 (U)	350.0 (U)
22.5 - 25.0	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	250.0 (J) - 1700.0 (U)	350.0 (U)
25.0 - 27.5	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	250.0 (J) - 1700.0 (U)	350.0 (U)
27.5 - 30.0	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	1700.0 (U)	350.0 (U)
30.0 - 32.5	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	1700.0 (U)	350.0 (U)
Average	0.0	0.0	0.0	0.0	0.0	31.3	0.0
116-DR-2	Trench						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	380.0 (U)	380.0 (U)	380.0 (U)	380.0 (U)	380.0 (U)	1900.0 (U)	380.0 (U)
15.0 - 17.5	380.0 (U)	380.0 (U)	380.0 (U)	380.0 (U)	380.0 (U)	1900.0 (U)	380.0 (U)
17.5 - 20.0	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	1700.0 (U)	340.0 (U)
20.0 - 22.5	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	1700.0 (U)	340.0 (U)
22.5 - 25.0	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	1600.0 (UJ) - 1700.0 (U)	340.0 (UJ) - 350.0 (U)
25.0 - 27.5	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	1600.0 (UJ) - 1700.0 (U)	340.0 (UJ) - 350.0 (U)
27.5 - 30.0	NS	NS	NS	NS	NS	NS	NS
30.0 - 32.5	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	1700.0 (U)	340.0 (U)
32.5 - 35.0	NS	NS	NS	NS	NS	NS	NS
35.0 - 37.5	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	1700.0 (U)	340.0 (U)
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0
116-D-2	Pluto Crib						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	SNL	SNL	340.0 (U)	340.0 (U)	340.0 (U)	1700.0 (U)	340.0 (U)
12.5 - 15.0	SNL	SNL	340.0 (U)	340.0 (U)	340.0 (U)	1700.0 (U)	340.0 (U)
15.0 - 17.5	330.0 (UJ)	330.0 (UJ)	330.0 (UJ)	330.0 (UJ)	330.0 (UJ)	1700.0 (UJ)	330.0 (UJ)
17.5 - 20.0	330.0 (UJ)	330.0 (UJ)	330.0 (UJ)	330.0 (UJ)	330.0 (UJ)	1700.0 (UJ)	330.0 (UJ)
20.2 - 22.5	NS	NS	NS	NS	NS	NS	NS
22.5 - 25.0	330.0 (UJ)	330.0 (UJ)	330.0 (UJ)	330.0 (UJ)	330.0 (UJ)	1700.0 (UJ)	330.0 (UJ)
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Summary of Investigation for 100-DR-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Semi-Volatile Organic Analysis continued Butyl-benzylphthalate (ug/kg)	Carbazole (ug/kg)	4-chloro-3-methylphenol (ug/kg)	2 Chlorophenol (ug/kg)	Chrysene (ug/kg)	Di-n-butyl phthalate (ug/kg)	Di-n-octyl phthalate (ug/kg)
116-DR-1	Trench						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	430.0 (U)	430.0 (U)	430.0 (U)	430.0 (U)	430.0 (U)	430.0 (U)	430.0 (U)
15.0 - 17.5	430.0 (U)	430.0 (U)	430.0 (U)	430.0 (U)	430.0 (U)	430.0 (U)	430.0 (U)
17.5 - 20.0	350.0 (U)	350.0 (U)	38.0 (J)	47.0 (J)	350.0 (U)	350.0 (U)	350.0 (U)
20.0 - 22.5	350.0 (U)	350.0 (U)	38.0 (J)	47.0 (J)	350.0 (U)	350.0 (U)	350.0 (U)
22.5 - 25.0	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)
25.0 - 27.5	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)
27.5 - 30.0	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)
30.0 - 32.5	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)
Average	0.0	0.0	9.5	11.8	0.0	0.0	0.0
116-DR-2	Trench						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS		NS	NS	NS	NS
12.5 - 15.0	380.0 (U)	NR	380.0 (U)	380.0 (U)	380.0 (U)	380.0 (U)	380.0 (U)
15.0 - 17.5	380.0 (U)	NR	380.0 (U)	380.0 (U)	380.0 (U)	380.0 (U)	380.0 (U)
17.5 - 20.0	340.0 (U)	NR	340.0 (U)	340.0 (U)	340.0 (U)	35.0 (J)	340.0 (U)
20.0 - 22.5	340.0 (U)	NR	340.0 (U)	340.0 (U)	340.0 (U)	35.0 (J)	340.0 (U)
22.5 - 25.0	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)
25.0 - 27.5	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)
27.5 - 30.0	NS	NS	NS	NS	NS	NS	NS
30.0 - 32.5	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)
32.5 - 35.0	NS	NS	NS	NS	NS	NS	NS
35.0 - 37.5	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)
Average	0.0	0.0	0.0	0.0	0.0	8.8	0.0
116-D-2	Pluto Crib						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)
12.5 - 15.0	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)
15.0 - 17.5	330.0 (UJ)	330.0 (UJ)	330.0 (UJ)	330.0 (UJ)	330.0 (UJ)	330.0 (UJ)	330.0 (UJ)
17.5 - 20.0	330.0 (UJ)	330.0 (UJ)	330.0 (UJ)	330.0 (UJ)	330.0 (UJ)	330.0 (UJ)	330.0 (UJ)
20.2 - 22.5	NS	NS	NS	NS	NS	NS	NS
22.5 - 25.0	330.0 (UJ)	330.0 (UJ)	330.0 (UJ)	330.0 (UJ)	330.0 (UJ)	330.0 (UJ)	330.0 (UJ)
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Summary of Investigation for 100-DR-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Semi-Volatile Organic Analysis continued 1,3-Dichloro-benzene (ug/kg)	1,4 Dichloro-benzene (ug/kg)	Diethyl phthalate (ug/kg)	Fluoran-thene (ug/kg)	Fluorene (ug/kg)	Indeno(1,2,3-cd) pyrene (ug/kg)	2-Nitro-phenol (ug/kg)
116-DR-1	Trench						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	430.0 (U)	430.0 (U)	430.0 (U)	430.0 (U)	430.0 (U)	430.0 (U)	430.0 (U)
15.0 - 17.5	430.0 (U)	430.0 (U)	430.0 (U)	430.0 (U)	430.0 (U)	430.0 (U)	430.0 (U)
17.5 - 20.0	48.0 (J)	37.0 (J)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)
20.0 - 22.5	48.0 (J)	37.0 (J)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)
22.5 - 25.0	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)
25.0 - 27.5	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)
27.5 - 30.0	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)
30.0 - 32.5	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)
Average	12.0	9.3	0.0	0.0	0.0	0.0	0.0
116-DR-2	Trench						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	380.0 (U)	380.0 (U)	380.0 (U)	380.0 (U)	380.0 (U)	380.0 (U)	380.0 (U)
15.0 - 17.5	380.0 (U)	380.0 (U)	380.0 (U)	380.0 (U)	380.0 (U)	380.0 (U)	380.0 (U)
17.5 - 20.0	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)
20.0 - 22.5	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)
22.5 - 25.0	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)
25.0 - 27.5	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)
27.5 - 30.0	NS	NS	NS	NS	NS	NS	NS
30.0 - 32.5	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)
32.5 - 35.0	NS	NS	NS	NS	NS	NS	NS
35.0 - 37.5	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0
116-D-2	Pluto Crib						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)
12.5 - 15.0	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)
15.0 - 17.5	330.0 (UJ)	330.0 (UJ)	330.0 (UJ)	330.0 (UJ)	330.0 (UJ)	330.0 (UJ)	330.0 (UJ)
17.5 - 20.0	330.0 (UJ)	330.0 (UJ)	330.0 (UJ)	330.0 (UJ)	330.0 (UJ)	330.0 (UJ)	330.0 (UJ)
20.2 - 22.5	NS	NS	NS	NS	NS	NS	NS
22.5 - 25.0	330.0 (UJ)	330.0 (UJ)	330.0 (UJ)	330.0 (UJ)	330.0 (UJ)	330.0 (UJ)	330.0 (UJ)
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Summary of Investigation for 100-DR-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Semi-Volatile Organic Analysis continued			Pesticides Analysis				
	Pentachloro-phenol (ug/kg)	Phenol (ug/kg)	Pyrene (ug/kg)	Aldrin (ug/kg)	Beta-BHC (ug/kg)	Dieldrin (ug/kg)	Endrin (ug/kg)	Heptachlor (ug/kg)
116-DR-1	Trench							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	2100.0 (U)	430.0 (U)	430.0 (U)	10.0 (U)	10.0 (U)	20.0 (U)	20.0 (UJ)	10.0 (U)
15.0 - 17.5	2100.0 (U)	430.0 (U)	430.0 (U)	10.0 (U)	10.0 (U)	20.0 (U)	20.0 (UJ)	10.0 (U)
17.5 - 20.0	1700.0 (U)	350.0 (U)	350.0 (U)	8.4 (U)	8.4 (U)	17.0 (U)	17.0 (UJ)	8.4 (U)
20.0 - 22.5	1700.0 (U)	350.0 (U)	350.0 (U)	8.4 (U)	8.4 (U)	10.0 (U)	17.0 (UJ)	8.4 (U)
22.5 - 25.0	1700.0 (U)	350.0 (U)	350.0 (U)	8.1 (UJ) - 8.4 (UJ)	8.1 (UJ) - 8.4 (UJ)	16.0 (UJ) - 17.0 (UJ)	16.0 (UJ) - 17.0 (UJ)	8.1 (UJ) - 8.4 (UJ)
25.0 - 27.5	1700.0 (U)	350.0 (U)	350.0 (U)	8.1 (UJ) - 8.4 (UJ)	8.1 (UJ) - 8.4 (UJ)	16.0 (UJ) - 17.0 (UJ)	16.0 (UJ) - 17.0 (UJ)	8.1 (UJ) - 8.4 (UJ)
27.5 - 30.0	1700.0 (U)	350.0 (U)	350.0 (U)	8.4 (UJ)	8.4 (UJ)	17.0 (UJ)	17.0 (UJ)	8.4 (UJ)
30.0 - 32.5	1700.0 (U)	350.0 (U)	350.0 (U)	8.4 (UJ)	8.4 (UJ)	17.0 (UJ)	17.0 (UJ)	8.4 (UJ)
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
116-DR-2	Trench							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	1900.0 (U)	380.0 (U)	380.0 (U)	9.1 (U)	9.1 (U)	18.0 (U)	18.0 (UJ)	9.1 (U)
15.0 - 17.5	1900.0 (U)	380.0 (U)	380.0 (U)	9.1 (U)	9.1 (U)	18.0 (U)	18.0 (UJ)	9.1 (U)
17.5 - 20.0	1700.0 (U)	340.0 (U)	340.0 (U)	8.3 (U)	8.3 (U)	17.0 (U)	17.0 (UJ)	8.3 (U)
20.0 - 22.5	1700.0 (U)	340.0 (U)	340.0 (U)	8.3 (U)	8.3 (U)	17.0 (U)	17.0 (UJ)	8.3 (U)
22.5 - 25.0	1600.0 (UJ) - 1700.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	4.2 (U) - 8.3 (UJ)	4.2 (U) - 8.3 (UJ)	8.4 (U) - 17.0 (UJ)	8.4 (U) - 17.0 (UJ)	4.2 (U) - 8.3 (UJ)
25.0 - 27.5	1600.0 (UJ) - 1700.0 (U)	340.0 (UJ) - 350.0 (U)	340.0 (UJ) - 350.0 (U)	4.2 (U) - 8.3 (UJ)	4.2 (U) - 8.3 (UJ)	8.4 (U) - 17.0 (UJ)	8.4 (U) - 17.0 (UJ)	4.2 (U) - 8.3 (UJ)
27.5 - 30.0	NS	NS	NS	NS	NS	NS	NS	NS
30.0 - 32.5	1700.0 (U)	340.0 (U)	340.0 (U)	8.3 (U)	8.3 (U)	16.0 (U)	16.0 (U)	8.3 (U)
32.5 - 35.0	NS	NS	NS	NS	NS	NS	NS	NS
35.0 - 37.5	1700.0 (U)	340.0 (U)	340.0 (U)	8.1 (U)	8.1 (U)	17.0 (U)	17.0 (U)	8.1 (U)
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
116-D-2	Pluto Crib							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	1700.0 (U)	340.0 (U)	340.0 (U)	8.2 (U)	8.2 (U)	16.0 (U)	16.0 (J)	8.2 (U)
12.5 - 15.0	1700.0 (U)	340.0 (U)	340.0 (U)	8.2 (U)	8.2 (U)	16.0 (U)	16.0 (J)	8.2 (U)
15.0 - 17.5	1700.0 (UJ)	1700.0 (UJ)	330.0 (UJ)	7.8 (U)	7.8 (U)	16.0 (U)	16.0 (UJ)	7.8 (U)
17.5 - 20.0	1700.0 (UJ)	1700.0 (UJ)	330.0 (UJ)	7.8 (U)	7.8 (U)	16.0 (U)	16.0 (UJ)	7.8 (U)
20.2 - 22.5	NS	NS	NS	NS	NS	NS	NS	NS
22.5 - 25.0	1700.0 (UJ)	1700.0 (UJ)	330.0 (UJ)	8.0 (U)	8.0 (U)	16.0 (U)	16.0 (UJ)	8.0 (U)
Average	0.0	0.0	0.0	0.0	0.0	0.0	6.4	0.0

Summary of Investigation for 100-DR-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	2,4-D (ug/kg)	Comments
116-DR-1	Trench	
0.0 - 10.0	NS	
10.0 - 12.5	NS	
12.5 - 15.0	NS	
15.0 - 17.5	NS	
17.5 - 20.0	NS	
20.0 - 22.5	NS	
22.5 - 25.0	NS	
25.0 - 27.5	NS	
27.5 - 30.0	NS	
30.0 - 32.5	NS	
Average	0.0	
116-DR-2	Trench	
0.0 - 10.0	NS	
10.0 - 12.5	NS	
12.5 - 15.0	NS	
15.0 - 17.5	NS	
17.5 - 20.0	NS	
20.0 - 22.5	NS	
22.5 - 25.0	NS	
25.0 - 27.5	NS	
27.5 - 30.0	NS	
30.0 - 32.5	NS	
32.5 - 35.0	NS	
35.0 - 37.5	NS	
Average	0.0	
116-D-2	Pluto Crib	
0.0 - 10.0	NS	Note Sample BO5X02 missing some qualifiers (ranges 10.0 - 12.5 and 12.5 - 15.0)
10.0 - 12.5	NS	
12.5 - 15.0	NS	
15.0 - 17.5	NS	
17.5 - 20.0	NS	
20.2 - 22.5	NS	
22.5 - 25.0	NS	
Average	0.0	

Summary of Investigation for 100-DR-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Volatile Organic Analysis: Acetone (ug/kg)	2-Butanone (ug/kg)	4-Methyl-2-Pentanone (ug/kg)	Methylene Chloride (ug/kg)	Toluene (ug/kg)	Trichloroethene (ug/kg)	Semi-Volatile Organic Analysis: Anthracene (ug/kg)	Aroclor 1260 (ug/kg)
116-D-9	Reactor Confinement Seal Pit Crib							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	60.0	11.0 (U)	11.0 (U)	11.0 (U)	6.0 (U)	6.0 (U)	340.0 (UJ)	170.0 (U)
17.5 - 20.0	60.0	11.0 (U)	11.0 (U)	11.0 (U)	6.0 (U)	6.0 (U)	340.0 (UJ)	170.0 (U)
20.0 - 22.5	NS	NS	NS	NS	NS	NS	NS	NS
22.5 - 25.0	39.0	10.0 (U)	10.0 (U)	10.0 (U)	5.0 (U)	5.0 (U)	340.0 (UJ)	160.0 (U)
25.0 - 27.5	39.0	10.0 (U)	10.0 (U)	10.0 (U)	5.0 (U)	5.0 (U)	340.0 (UJ)	160.0 (U)
Average	49.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0
132-D-3	Effluent Pumping Station							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	12.0 (UJ)	10.0 (U)	10.0 (U)	10.0 (UJ)	5.0 (U)	5.0 (U)	340.0 (UJ)	160.0 (U)
20.0 - 22.5	12.0 (UJ)	10.0 (U)	10.0 (U)	10.0 (UJ)	5.0 (U)	5.0 (U)	340.0 (UJ)	160.0 (U)
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	34.0 (UJ)	10.0 (U)	11.0 (U)	16.0 (UJ)	8.0	6.0 (U)	350.0 (UJ)	170.0 (U)
27.5 - 30.0	NS	NS	NS	NS	NS	NS	NS	NS
30.0 - 32.5	NS	NS	NS	NS	NS	NS	NS	NS
32.5 - 35.0	NS	NS	NS	NS	NS	NS	NS	NS
35.0 - 37.5	10.0 (UJ) - 12.0 (UJ)	10.0 (U) - 11.0 (UJ)	10.0 (U) - 11.0 (UJ)	11.0 (UJ) - 15.0 (UJ)	5.0 (U) - 6.0 (UJ)	5.0 (U) - 6.0 (UJ)	340.0 (UJ)	170.0 (U)
37.5 - 40.0	10.0 (UJ)	11.0 (UJ)	11.0 (UJ)	11.0 (UJ)	6.0 (UJ)	6.0 (UJ)	SNL	SNL
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Summary of Investigation for 100-DR-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Semi-Volatile Organic Analysis continued Benzo(a) anthracene (ug/kg)	Benzo(a) pyrene (ug/kg)	Benzo(b) fluoranthene (ug/kg)	Benzo(k) fluoranthene (ug/kg)	Benzo(ghi) perylene (ug/kg)	Benzoic Acid (ug/kg)	bis(2-ethyl hexyl) phthalate (ug/kg)
116-D-9	Reactor Confinement Seal Pit Crib						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	1700.0 (UJ)	340.0 (UJ)
17.5 - 20.0	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	1700.0 (UJ)	340.0 (UJ)
20.0 - 22.5	NS	NS	NS	NS	NS	NS	NS
22.5 - 25.0	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	1700.0 (UJ)	340.0 (UJ)
25.0 - 27.5	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	1700.0 (UJ)	340.0 (UJ)
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0
132-D-3	Effluent Pumping Station						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	1700.0 (UJ)	340.0 (UJ)
20.0 - 22.5	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	1700.0 (UJ)	340.0 (UJ)
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	350.0 (UJ)	350.0 (UJ)	350.0 (UJ)	350.0 (UJ)	350.0 (UJ)	1700.0 (UJ)	350.0 (UJ)
27.5 - 30.0	NS	NS	NS	NS	NS	NS	NS
30.0 - 32.5	NS	NS	NS	NS	NS	NS	NS
32.5 - 35.0	NS	NS	NS	NS	NS	NS	NS
35.0 - 37.5	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	1700.0 (UJ)	340.0 (UJ)
37.5 - 40.0	SNL	SNL	SNL	SNL	SNL	SNL	SNL
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Summary of Investigation for 100-DR-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Semi-Volatile Organic Analysis continued Butyl-benzylphthalate (ug/kg)	Carbazole (ug/kg)	4-chloro-3-methylphenol (ug/kg)	2 Chlorophenol (ug/kg)	Chrysene (ug/kg)	Di-n-butyl phthalate (ug/kg)	Di-n-octyl phthalate (ug/kg)
116-D-9	Reactor Confinement Seal Pit Crib						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)
17.5 - 20.0	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)
20.0 - 22.5	NS	NS	NS	NS	NS	NS	NS
22.5 - 25.0	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)
25.0 - 27.5	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0
132-D-3	Effluent Pumping Station						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)
20.0 - 22.5	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	350.0 (UJ)	350.0 (UJ)	350.0 (UJ)	350.0 (UJ)	350.0 (UJ)	350.0 (UJ)	350.0 (UJ)
27.5 - 30.0	NS	NS	NS	NS	NS	NS	NS
30.0 - 32.5	NS	NS	NS	NS	NS	NS	NS
32.5 - 35.0	NS	NS	NS	NS	NS	NS	NS
35.0 - 37.5	590.0 (J)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	4300.0 (J)	340.0 (UJ)
37.5 - 40.0	SNL	SNL	SNL	SNL	SNL	SNL	SNL
Average	147.5	0.0	0.0	0.0	0.0	1075.0	0.0

Summary of Investigation for 100-DR-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Semi-Volatile Organic Analysis continued 1,3 Dichloro-benzene (ug/kg)	1,4 Dichloro-benzene (ug/kg)	Diethyl phthalate (ug/kg)	Fluoran-thene (ug/kg)	Fluorene (ug/kg)	Indeno(1,2,3-cd) pyrene (ug/kg)	2-Nitro-phenol (ug/kg)
116-D-9	Reactor Confinement Seal Pit Crib						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)
17.5 - 20.0	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)
20.0 - 22.5	NS	NS	NS	NS	NS	NS	NS
22.5 - 25.0	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)
25.0 - 27.5	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0
132-D-3	Effluent Pumping Station						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)
20.0 - 22.5	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	350.0 (UJ)	350.0 (UJ)	350.0 (UJ)	350.0 (UJ)	350.0 (UJ)	350.0 (UJ)	350.0 (UJ)
27.5 - 30.0	NS	NS	NS	NS	NS	NS	NS
30.0 - 32.5	NS	NS	NS	NS	NS	NS	NS
32.5 - 35.0	NS	NS	NS	NS	NS	NS	NS
35.0 - 37.5	340.0 (UJ)	340.0 (UJ)	100.0 (J)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)
37.5 - 40.0	SNL	SNL	SNL	SNL	SNL	SNL	SNL
Average	0.0	0.0	25.0	0.0	0.0	0.0	0.0

Summary of Investigation for 100-DR-1 Operable Unit - Organic Constituents

	Semi-Volatile Organic Analysis continued			Pesticides Analysis				
Site Identification with depth (ft) of sample collection	Pentachloro-phenol (ug/kg)	Phenol (ug/kg)	Pyrene (ug/kg)	Aldrin (ug/kg)	Beta-BHC (ug/kg)	Dieldrin (ug/kg)	Endrin (ug/kg)	Heptachlor (ug/kg)
116-D-9	Reactor Confinement Seal Pit Crib							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	1700.0 (UJ)	340.0 (UJ)	340.0 (UJ)	8.6 (U)	8.6 (U)	17.0 (U)	17.0 (U)	8.6 (U)
17.5 - 20.0	1700.0 (UJ)	340.0 (UJ)	340.0 (UJ)	8.6 (U)	8.6 (U)	17.0 (U)	17.0 (U)	8.6 (U)
20.0 - 22.5	NS	NS	NS	NS	NS	NS	NS	NS
22.5 - 25.0	1700.0 (UJ)	340.0 (UJ)	340.0 (UJ)	7.9 (U)	7.9 (U)	16.0 (U)	16.0 (U)	7.9 (U)
25.0 - 27.5	1700.0 (UJ)	340.0 (UJ)	340.0 (UJ)	7.9 (U)	7.9 (U)	16.0 (U)	16.0 (U)	7.9 (U)
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
132-D-3	Effluent Pumping Station							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	1700.0 (UJ)	340.0 (UJ)	340.0 (UJ)	7.9 (U)	7.9 (U)	16.0 (U)	16.0 (UJ)	7.9 (U)
20.0 - 22.5	1700.0 (UJ)	340.0 (UJ)	340.0 (UJ)	7.9 (U)	7.9 (U)	16.0 (U)	16.0 (UJ)	7.9 (U)
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	1700.0 (UJ)	350.0 (UJ)	350.0 (UJ)	8.4 (U)	8.4 (U)	17.0 (U)	17.0 (UJ)	8.4 (U)
27.5 - 30.0	NS	NS	NS	NS	NS	NS	NS	NS
30.0 - 32.5	NS	NS	NS	NS	NS	NS	NS	NS
32.5 - 35.0	NS	NS	NS	NS	NS	NS	NS	NS
35.0 - 37.5	1700.0 (UJ)	340.0 (UJ)	340.0 (UJ)	8.4 (U)	8.4 (U)	17.0 (U)	17.0 (U)	8.4 (R)
37.5 - 40.0	SNL	SNL	SNL	SNL	SNL	SNL	SNL	SNL
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.1

Summary of Investigation for 100-DR-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	2,4-D (ug/kg)	Comments
116-D-9	Reactor Confinement Seal Pit Crib	
0.0 - 10.0	NS	
10.0 - 12.5	NS	
12.5 - 15.0	NS	
15.0 - 17.5	NS	
17.5 - 20.0	NS	
20.0 - 22.5	NS	
22.5 - 25.0	NS	
25.0 - 27.5	NS	
Average	0.0	
132-D-3	Effluent Pumping Station	
0.0 - 10.0	NS	
10.0 - 12.5	NS	
12.5 - 15.0	NS	
15.0 - 17.5	NS	
17.5 - 20.0	NS	
20.0 - 22.5	NS	
22.5 - 25.0	NS	
25.0 - 27.5	NS	
27.5 - 30.0	NS	
30.0 - 32.5	NS	
32.5 - 35.0	NS	
35.0 - 37.5	NS	
37.5 - 40.0	NS	
Average	0.0	

Summary of Investigation for 100-DR-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Volatile Organic Analysis						Semi-Volatile Organic Analysis	
	Acetone (ug/kg)	2-Butanone (ug/kg)	4-Methyl-2-Pentanone (ug/kg)	Methylene Chloride (ug/kg)	Toluene (ug/kg)	Trichloroethene (ug/kg)	Anthracene (ug/kg)	Aroclor 1260 (ug/kg)
116-D-5	Outfall Structure							
0.0 - 5.0	NS	NS	NS	NS	NS	NS	NS	NS
5.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	13.0 (UJ)	10.0 (UJ)	10.0 (UJ)	10.0 (U)	5.0 (U)	5.0	340.0 (UJ)	160.0 (U)
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	13.0	10.0	10.0	11.0	5.0	5.0	340.0	160.0
Average	6.5	5.0	5.0	5.5	2.5	5.0	170.0	80.0
116-DR-5	Outfall Structure							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	69.0 (U)	10.0 (U)	10.0 (U)	10.0 (U)	5.0 (U)	5.0 (U)	340.0 (UJ)	160.0 (U)
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	43.0 (UJ)	11.0 (UJ)	11.0 (UJ)	10.0 (U)	6.0 (UJ)	6.0 (U)	340.0 (UJ)	170.0 (U)
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
116-D-3	Crib							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	87.0 (UJ)	10.0 (UJ)	10.0 (U)	10.0 (U)	5.0 (U)	5.0 (U)	340.0 (U)	410.0 (U)
15.0 - 17.5	87.0 (UJ)	10.0 (UJ)	10.0 (U)	10.0 (U)	5.0 (U)	5.0 (U)	340.0 (U)	410.0 (U)
17.5 - 20.0	23.0 (UJ)	10.0 (J)	10.0 (U)	15.0 (U)	5.0 (U)	5.0 (U)	340.0 (U)	82.0 (U)
20.0 - 22.5	23.0 (UJ)	10.0 (J)	10.0 (U)	15.0 (U)	5.0 (U)	5.0 (U)	340.0 (U)	82.0 (U)
Average	0.0	5.0	0.0	0.0	0.0	0.0	0.0	0.0

Summary of Investigation for 100-DR-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Semi-Volatile Organic Analysis continued Benzo(a) anthracene (ug/kg)	Benzo(a) pyrene (ug/kg)	Benzo(b) fluoranthene (ug/kg)	Benzo(k) fluoranthene (ug/kg)	Benzo(ghi) perylene (ug/kg)	Benzoic Acid (ug/kg)	bis(2-ethyl hexyl) phthalate (ug/kg)
116-D-5	Outfall Structure						
0.0 - 5.0	NS	NS	NS	NS	NS	NS	NS
5.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	1700.0 (UJ)	340.0 (UJ)
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	340.0	340.0	340.0	340.0	340.0	1700.0	5200.0
Average	170.0	170.0	170.0	170.0	170.0	850.0	2600.0
116-DR-5	Outfall Structure						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	1700.0 (UJ)	340.0 (UJ)
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	1700.0 (U)	5500.0
Average	0.0	0.0	0.0	0.0	0.0	0.0	2750.0
116-D-3	Crib						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	1700.0 (U)	100.0 (J)
15.0 - 17.5	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	1700.0 (U)	100.0 (J)
17.5 - 20.0	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	1700.0 (U)	45.0 (J)
20.0 - 22.5	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	1700.0 (U)	45.0 (J)
Average	0.0	0.0	0.0	0.0	0.0	0.0	72.5

Summary of Investigation for 100-DR-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Semi-Volatile Organic Analysis continued: Butyl-benzylphthalate (ug/kg)	Carbazole (ug/kg)	4-chloro-3-methylphenol (ug/kg)	2 Chlorophenol (ug/kg)	Chrysene (ug/kg)	Di-n-butyl phthalate (ug/kg)	Di-n-octyl phthalate (ug/kg)
116-D-5	Outfall Structure						
0.0 - 5.0	NS	NS	NS	NS	NS	NS	NS
5.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	2500.0	340.0	340.0	340.0	340.0	2000.0	340.0
Average	1250.0	170.0	170.0	170.0	170.0	1000.0	170.0
116-DR-5	Outfall Structure						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	340.0 (UJ)	NS	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	2100.0	340.0 (UJ)	340.0 (U)	340.0 (U)	340.0 (U)	1900.0 (J)	340.0 (U)
Average	1050.0	0.0	0.0	0.0	0.0	950.0	0.0
116-D-3	Crib						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	140.0 (J)	340.0 (U)
15.0 - 17.5	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	140.0 (J)	340.0 (U)
17.5 - 20.0	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	37.0 (J)	340.0 (U)
20.0 - 22.5	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	37.0 (J)	340.0 (U)
Average	0.0	0.0	0.0	0.0	0.0	88.5	0.0

Summary of Investigation for 100-DR-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Semi-Volatile Organic Analysis continued 1,3 Dichloro-benzene (ug/kg)	1,4 Dichloro-benzene (ug/kg)	Diethyl phthalate (ug/kg)	Fluoran-thene (ug/kg)	Fluorene (ug/kg)	Indeno(1,2,3-cd) pyrene (ug/kg)	2-Nitro-phenol (ug/kg)
116-D-5	Outfall Structure						
0.0 - 5.0	NS	NS	NS	NS	NS	NS	NS
5.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	1700.0 (UJ)	340.0 (UJ)	340.0 (UJ)
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	340.0	340.0	340.0	340.0	340.0	340.0	340.0
Average	170.0	170.0	170.0	170.0	170.0	170.0	170.0
116-DR-5	Outfall Structure						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	1700.0 (UJ)
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (UJ)	340.0 (U)	340.0 (U)	340.0 (U)
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0
116-D-3	Crib						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)
15.0 - 17.5	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)
17.5 - 20.0	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)
20.0 - 22.5	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Summary of Investigation for 100-DR-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Semi-Volatile Organic Analysis continued: Pentachloro-phenol (ug/kg)	Phenol (ug/kg)	Pyrene (ug/kg)	Pesticides Analysis: Aldrin (ug/kg)	Beta-BHC (ug/kg)	Dieldrin (ug/kg)	Endrin (ug/kg)	Heptachlor (ug/kg)
116-D-5	Outfall Structure							
0.0 - 5.0	NS	NS	NS	NS	NS	NS	NS	NS
5.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	1700.0 (UJ)	340.0 (UJ)	340.0 (UJ)	8.2 (UJ)	8.2 (U)	16.0 (U)	16.0 (U)	8.2 (U)
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	1700.0	340.0	340.0	8.2	8.2	16.0	16.0	8.2
Average	850.0	170.0	170.0	4.1	4.1	8.0	8.0	4.1
116-DR-5	Outfall Structure							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	1700.0 (UJ)	340.0 (UJ)	340.0 (UJ)	8.2 (UJ)	8.2 (U)	16.0 (U)	16.0 (U)	8.2 (U)
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	1700.0 (UJ)	340.0 (U)	340.0 (U)	8.3 (U)	8.3 (U)	2.1 (J)	17.0 (U)	8.3 (U)
Average	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.0
116-D-3	Crib							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	1700.0 (U)	340.0 (U)	340.0 (U)	20.0 (U)	20.0 (U)	41.0 (U)	41.0 (U)	20.0 (U)
15.0 - 17.5	1700.0 (U)	340.0 (U)	340.0 (U)	20.0 (U)	20.0 (U)	41.0 (U)	41.0 (U)	20.0 (U)
17.5 - 20.0	1700.0 (U)	340.0 (U)	340.0 (U)	4.1 (U)	4.1 (U)	8.2 (U)	8.2 (U)	4.1 (U)
20.0 - 22.5	1700.0 (U)	340.0 (U)	340.0 (U)	4.1 (U)	4.1 (U)	8.2 (U)	8.2 (U)	4.1 (U)
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Summary of Investigation for 100-DR-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	2,4-D (ug/kg)	Comments
116-D-5	Outfall Structure	
0.0 - 5.0	NS	
5.0 - 10.0	NS	
10.0 - 12.5	NS	
12.5 - 15.0	NS	
15.0 - 17.5	NS	
17.5 - 20.0	NS	
20.0 - 22.5	NS	
22.5 - 25.0	NS	
25.0 - 27.5	NS	
Average	0.0	
116-DR-5	Outfall Structure	
0.0 - 10.0	NS	
10.0 - 12.5	NS	
12.5 - 15.0	NS	
15.0 - 17.5	NS	
17.5 - 20.0	NS	
20.0 - 22.5	NS	
22.5 - 25.0	NS	
25.0 - 27.5	NS	
Average	0.0	
116-D-3	Crib	
0.0 - 10.0	NS	
10.0 - 12.5	NS	
12.5 - 15.0	NS	
15.0 - 17.5	NS	
17.5 - 20.0	NS	
20.0 - 22.5	NS	
Average	0.0	

Summary of Investigation for 100-DR-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Volatile Organic Analysis						Semi-Volatile Organic Analysis	
	Acetone (ug/kg)	2-Butanone (ug/kg)	4-Methyl-2-Pentanone (ug/kg)	Methylene Chloride (ug/kg)	Toluene (ug/kg)	Trichloroethene (ug/kg)	Anthracene (ug/kg)	Aroclor 1260 (ug/kg)
116-D-4	Crib							
0.0 - 5.0	33.0 (U)	11.0 (U)	11.0 (U)	11.0 (U)	6.0 (U)	6.0 (U)	350.0 (U)	83.0 (U)
5.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	39.0 (U)	10.0 (U)	4.0 (J)	10.0 (U)	5.0 (U)	5.0 (U)	340.0 (U)	82.0 (U)
12.5 - 15.0	41.0 (U)	10.0 (U)	10.0 (U)	10.0 (U)	5.0 (U)	5.0 (U)	340.0 (U)	80.0 (U)
15.0 - 17.5	41.0 (U)	10.0 (U)	10.0 (U)	10.0 (U)	5.0 (U)	5.0 (U)	340.0 (U)	80.0 (U)
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	24.0 (U)	10.0 (U)	10.0 (U)	10.0 (U)	5.0 (U)	5.0 (U)	340.0 (U)	81.0 (U)
22.5 - 25.0	24.0 (U)	10.0 (U)	10.0 (U)	10.0 (U)	5.0 (U)	5.0 (U)	340.0 (U)	81.0 (U)
Average	0.0	0.0	0.6	0.0	0.0	0.0	0.0	0.0
130-D-1	Underground Storage Tank							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	33.0 (UJ) - 35.0 (UJ)	10.0 (UJ)	10.0 (UJ)	10.0 (U) - 13.0 (U)	6.0 - 8.0 (U)	5.0 (U)	340.0 (UJ)	160.0 (U)
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	NS	NS	NS	NS	NS	NS	NS	NS
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	77.0	10.0 (U)	10.0 (U)	6.0	2.0 (J)	5.0 (U)	350.0 (U)	160.0 (U)
Average	38.5	0.0	0.0	3.0	2.5	0.0	0.0	0.0
108-D	Demolished Office Building							
0.0 - 5.0	NS	NS	NS	NS	NS	NS	NS	NS
5.0 - 10.0	SNL	SNL	SNL	SNL	SNL	SNL	340.0 (UJ)	170.0 (UJ)
Average	NS	NS	NS	NS	NS	NS	0.0	0.0
	Sodium Dichromate Tanks							
0.0 - 5.0	SNL	SNL	SNL	SNL	1.0 (J)	SNL	SNL	SNL
Average	SNL	SNL	SNL	SNL	1.0	SNL	SNL	SNL
103-D	Fuel Element Storage Building							
WIPE SAMPLES	SNL	SNL	SNL	SNL	SNL	SNL	SNL	SNL
Average	SNL	SNL	SNL	SNL	SNL	SNL	SNL	SNL
126-D-2	Solid Waste Landfill							
4A, 4B, 18	Burial Grounds							
115-D	Demolished Gas Recirculation Building							
117-D	Demolished Exhaust Air Filter Building							

Summary of Investigation for 100-DR-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Semi-Volatile Organic Analysis continued						
	Benzo(a) anthracene (ug/kg)	Benzo(a) pyrene (ug/kg)	Benzo(b) fluoranthene (ug/kg)	Benzo(k) fluoranthene (ug/kg)	Benzo(ghi) perylene (ug/kg)	Benzoic Acid (ug/kg)	bis(2-ethyl hexyl) phthalate (ug/kg)
116-D-4	Crib						
0.0 - 5.0	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	1800.0 (U)	350.0 (U)
5.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	1700.0 (U)	340.0 (U)
12.5 - 15.0	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	1700.0 (U)	340.0 (U)
15.0 - 17.5	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	1700.0 (U)	340.0 (U)
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	1700.0 (U)	340.0 (U)
22.5 - 25.0	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	1700.0 (U)	340.0 (U)
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130-D-1	Underground Storage Tank						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	1700.0 (U)	5500.0
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	NS	NS	NS	NS	NS	NS	NS
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	1700.0 (U)	350.0 (U)
Average	0.0	0.0	0.0	0.0	0.0	0.0	2750.0
108-D	Demolished Office Building						
0.0 - 5.0	NS	NS	NS	NS	NS	NS	NS
5.0 - 10.0	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	1700.0 (UJ)	340.0 (UJ)
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Sodium Dichromate Tanks						
0.0 - 5.0	SNL	SNL	SNL	SNL	SNL	SNL	SNL
Average	SNL	SNL	SNL	SNL	SNL	SNL	SNL
103-D	Fuel Element Storage Building						
WIPE SAMPLES	SNL	SNL	SNL	SNL	SNL	SNL	SNL
Average	SNL	SNL	SNL	SNL	SNL	SNL	SNL
126-D-2	Solid Waste Landfill						
4A, 4B, 18	Burial Grounds						
115-D	Demolished Gas Recirculation Building						
117-D	Demolished Exhaust Air Filter Building						

Summary of Investigation for 100-DR-1 Operable Unit - Organic Constituents

	Semi-Volatile Organic Analysis continued						
Site Identification with depth (ft) of sample collection	Butyl-benzylphthalate (ug/kg)	Carbazole (ug/kg)	4-chloro-3-methylphenol (ug/kg)	2 Chlorophenol (ug/kg)	Chrysene (ug/kg)	Di-n-butyl phthalate (ug/kg)	Di-n-octyl phthalate (ug/kg)
116-D-4	Crib						
0.0 - 5.0	350.0 (U)	NR	350.0 (U)	350.0 (UJ)	350.0 (U)	350.0 (U)	350.0 (U)
5.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	340.0 (U)	NR	340.0 (U)	340.0 (UJ)	340.0 (U)	340.0 (U)	340.0 (U)
12.5 - 15.0	340.0 (U)	NS	340.0 (U)	340.0 (UJ)	340.0 (U)	340.0 (U)	340.0 (U)
15.0 - 17.5	340.0 (U)	NS	340.0 (U)	340.0 (UJ)	340.0 (U)	340.0 (U)	340.0 (U)
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	340.0 (U)	NR	340.0 (U)	340.0 (UJ)	340.0 (U)	340.0 (U)	340.0 (U)
22.5 - 25.0	340.0 (U)	NR	340.0 (U)	340.0 (UJ)	340.0 (U)	340.0 (U)	340.0 (U)
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0
130-D-1	Underground Storage Tank						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	2600.0	340.0 (UJ)	340.0 (U)	340.0 (U)	340.0 (U)	2100.0 (J)	340.0 (U)
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	NS	NS	NS	NS	NS	NS	NS
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	350.0 (U)	NR	350.0 (U)	350.0 (U)	350.0 (U)	130.0 (J)	350.0 (U)
Average	1300.0	0.0	0.0	0.0	0.0	1115.0	0.0
108-D	Demolished Office Building						
0.0 - 5.0	NS	NS	NS	NS	NS	NS	NS
5.0 - 10.0	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Sodium Dichromate Tanks						
0.0 - 5.0	SNL	SNL	SNL	SNL	SNL	93.0 (J) - 170.0 (J)	SNL
Average	SNL	SNL	SNL	SNL	SNL	131.5	SNL
103-D	Fuel Element Storage Building						
WIPE SAMPLES	SNL	SNL	SNL	SNL	SNL	SNL	SNL
Average	SNL	SNL	SNL	SNL	SNL	SNL	SNL
126-D-2	Solid Waste Landfill						
4A, 4B, 18	Burial Grounds						
115-D	Demolished Gas Recirculation Building						
117-D	Demolished Exhaust Air Filter Building						

Summary of Investigation for 100-DR-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Semi-Volatile Organic Analysis continued						
	1,3 Dichloro-benzene (ug/kg)	1,4 Dichloro-benzene (ug/kg)	Diethyl phthalate (ug/kg)	Fluoran-thene (ug/kg)	Fluorene (ug/kg)	Indeno(1,2,3-cd) pyrene (ug/kg)	2-Nitro-phenol (ug/kg)
116-D-4	Crib						
0.0 - 5.0	350.0 (UJ)	350.0 (UJ)	350.0 (U)	37.0 (J)	350.0 (U)	350.0 (U)	350.0 (U)
5.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	340.0 (UJ)	340.0 (UJ)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)
12.5 - 15.0	340.0 (UJ)	340.0 (UJ)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)
15.0 - 17.5	340.0 (UJ)	340.0 (UJ)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	340.0 (UJ)	340.0 (UJ)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)
22.5 - 25.0	340.0 (UJ)	340.0 (UJ)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)
Average	0.0	0.0	0.0	10.6	0.0	0.0	0.0
130-D-1	Underground Storage Tank						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (UJ)	340.0 (U)	340.0 (U)	340.0 (U)
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	NS	NS	NS	NS	NS	NS	NS
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	350.0 (U)	350.0 (U)	130.0 (J)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)
Average	0.0	0.0	65.0	0.0	0.0	0.0	0.0
108-D	Demolished Office Building						
0.0 - 5.0	NS	NS	NS	NS	NS	NS	NS
5.0 - 10.0	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)	340.0 (UJ)
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Sodium Dichromate Tanks						
0.0 - 5.0	SNL	SNL	SNL	SNL	SNL	SNL	SNL
Average	SNL	SNL	SNL	SNL	SNL	SNL	SNL
103-D	Fuel Element Storage Building						
WIPE SAMPLES	SNL	SNL	SNL	SNL	SNL	SNL	SNL
Average	SNL	SNL	SNL	SNL	SNL	SNL	SNL
126-D-2	Solid Waste Landfill						
4A, 4B, 18	Burial Grounds						
115-D	Demolished Gas Recirculation Building						
117-D	Demolished Exhaust Air Filter Building						

Summary of Investigation for 100-DR-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Semi-Volatile Organic Analysis continued			Pesticides Analysis				
	Pentachloro-phenol (ug/kg)	Phenol (ug/kg)	Pyrene (ug/kg)	Aldrin (ug/kg)	Beta-BHC (ug/kg)	Dieldrin (ug/kg)	Endrin (ug/kg)	Heptachlor (ug/kg)
116-D-4	Crib							
0.0 - 5.0	1800.0 (U)	350.0 (UJ)	37.0 (J)	4.1 (U)	4.1 (U)	8.3 (U)	8.3 (UJ)	4.1 (U)
5.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	1700.0 (U)	340.0 (UJ)	340.0 (U)	4.1 (U)	4.1 (U)	8.2 (U)	8.2 (UJ)	4.1 (U)
12.5 - 15.0	1700.0 (U)	340.0 (UJ)	340.0 (U)	4.0 (U)	4.0 (U)	8.0 (U)	8.0 (UJ)	4.0 (U)
15.0 - 17.5	1700.0 (U)	340.0 (UJ)	340.0 (U)	4.0 (U)	4.0 (U)	8.0 (U)	8.0 (UJ)	4.0 (U)
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	1700.0 (U)	340.0 (UJ)	340.0 (U)	4.1 (U)	4.1 (U)	8.1 (U)	8.1 (UJ)	4.1 (U)
22.5 - 25.0	1700.0 (U)	340.0 (UJ)	340.0 (U)	4.1 (U)	4.1 (U)	8.1 (U)	8.1 (UJ)	4.1 (U)
Average	0.0	0.0	10.6	0.0	0.0	0.0	0.0	0.0
130-D-1	Underground Storage Tank							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	1700.0 (UJ)	340.0 (U)	340.0 (U)	8.2 (U)	8.2 (U)	16.0 (U)	16.0 (U)	8.2 (U)
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	NS	NS	NS	NS	NS	NS	NS	NS
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	1700.0 (U)	350.0 (U)	350.0 (U)	8.1 (U)	8.1 (U)	16.0 (U)	16.0 (U)	8.1 (U)
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
108-D	Demolished Office Building							
0.0 - 5.0	NS	NS	NS	NS	NS	NS	NS	NS
5.0 - 10.0	1700.0 (UJ)	340.0 (UJ)	340.0 (UJ)	8.3 (UJ)	8.3 (UJ)	17.0 (UJ)	17.0 (UJ)	8.3 (UJ)
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Sodium Dichromate Tanks							
0.0 - 5.0	SNL	SNL	SNL	SNL	SNL	SNL	SNL	SNL
Average	SNL	SNL	SNL	SNL	SNL	SNL	SNL	SNL
103-D	Fuel Element Storage Building							
WIPE SAMPLES	SNL	SNL	SNL	SNL	SNL	SNL	SNL	SNL
Average	SNL	SNL	SNL	SNL	SNL	SNL	SNL	SNL
126-D-2	Solid Waste Landfill							
4A, 4B, 18	Burial Grounds							
115-D	Demolished Gas Recirculation Building							
117-D	Demolished Exhaust Air Filter Building							

Summary of Investigation for 100-DR-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	2,4-D (ug/kg)	Comments
116-D-4	Crib	
0.0 - 5.0	NS	
5.0 - 10.0	NS	
10.0 - 12.5	NS	
12.5 - 15.0	NS	
15.0 - 17.5	NS	
17.5 - 20.0	NS	
20.0 - 22.5	NS	
22.5 - 25.0	NS	
Average	0.0	
130-D-1	Underground Storage Tank	
0.0 - 10.0	NS	
10.0 - 12.5	NS	
12.5 - 15.0	NS	
15.0 - 17.5	NS	
17.5 - 20.0	NS	
20.0 - 22.5	NS	
22.5 - 25.0	NS	
25.0 - 27.5	NS	
Average	0.0	
108-D	Demolished Office Building	
0.0 - 5.0	NS	
5.0 - 10.0	NS	
Average	NS	
	Sodium Dichromate Tanks	
0.0 - 5.0	NS	
Average	NS	
103-D		
WIPE SAMPLES	0.58 (J) - 0.75 (J)	
Average	0.7	
126-D-2	Solid Waste Landfill	No LFI Investigation
4A, 4B, 18	Burial Grounds	No LFI Investigation
115-D	Demolished Gas Recirculation Building	No LFI Investigation
117-D	Demolished Exhaust Air Filter Building	No LFI Investigation

Summary of Investigation for 100-DR-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Volatile Organic Analysis						Semi-Volatile Organic Analysis	
	Acetone (ug/kg)	2-Butanone (ug/kg)	4-Methyl-2-Pentanone (ug/kg)	Methylene Chloride (ug/kg)	Toluene (ug/kg)	Trichloroethene (ug/kg)	Anthracene (ug/kg)	Aroclor 1260 (ug/kg)
	Process Effluent Pipelines							
107-D/107-DR	Sludge Disposal Trenches (5)							

Summary of Investigation for 100-DR-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Semi-Volatile Organic Analysis continued						
	Benzo(a) anthracene (ug/kg)	Benzo(a) pyrene (ug/kg)	Benzo(b) fluoranthene (ug/kg)	Benzo(k) fluoranthene (ug/kg)	Benzo(ghi) perylene (ug/kg)	Benzoic Acid (ug/kg)	bis(2-ethyl hexyl) phthalate (ug/kg)
	Process Effluent Pipelines						
107-D/107-DR	Sludge Disposal Trenches (5)						

Summary of Investigation for 100-DR-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Semi-Volatile Organic Analysis continued						
	Butyl-benzylphthalate (ug/kg)	Carbazole (ug/kg)	4-chloro-3-methylphenol (ug/kg)	2 Chlorophenol (ug/kg)	Chrysene (ug/kg)	Di-n-butyl phthalate (ug/kg)	Di-n-octyl phthalate (ug/kg)
	Process Effluent Pipelines						
107-D/107-DR	Sludge Disposal Trenches (5)						

Summary of Investigation for 100-DR-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Semi-Volatile Organic Analysis continued						
	1,3 Dichloro-benzene (ug/kg)	1,4 Dichloro-benzene (ug/kg)	Diethyl phthalate (ug/kg)	Fluoran-thene (ug/kg)	Fluorene (ug/kg)	Indeno(1,2,3-cd) pyrene (ug/kg)	2-Nitro-phenol (ug/kg)
	Process Effluent Pipelines						
107-D/107-DR	Sludge Disposal Trenches (5)						

Summary of Investigation for 100-DR-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Semi-Volatile Organic Analysis continued			Pesticides Analysis				
	Pentachloro-phenol (ug/kg)	Phenol (ug/kg)	Pyrene (ug/kg)	Aldrin (ug/kg)	Beta-BHC (ug/kg)	Dieldrin (ug/kg)	Endrin (ug/kg)	Heptachlor (ug/kg)
	Process Effluent Pipelines							
107-D/107-DR	Sludge Disposal Trenches (5)							

Summary of Investigation for 100-DR-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	2,4-D (ug/kg)	Comments
	Process Effluent Pipelines	No LFI Investigation
107-D/107-DR	Sludge Disposal Trenches (5)	No LFI Investigation

Summary of Investigation for 100-HR-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Volatile Organic Analysis			Semivolatile Organic Analysis			
	Acetone(c) (ug/kg)	Methylene Chloride(d) (ug/kg)	Toluene(e) (ug/kg)	Acena-phthene (ug/kg)	Anthracene (ug/kg)	Aroclor-1254 (ug/kg)	Aroclor-1260 (ug/kg)
116-H-1	Process Effluent Disposal Trench						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	13.0 (B)	11.0	14.0	NS	NS	NS	NS
12.5 - 15.0	11.0 - 12.0	10.0 (U) - 11.0 (U)	4.0 (J) - 5.0 (U)	210.0 (J)	430.0 (J)	170.0 (U)	170.0 (U)
15.0 - 17.5	12.0 - 15.0 (U)	10.0 (U) - 11.0 (U)	1.0 (J) - 5.0 (U)	210.0 (J) - 340.0 (J)	340.0 (U) - 430.0 (J)	160.0 (U) - 170.0 (U)	160.0 (U) - 170.0 (U)
17.5 - 20.0	10.0 (U) - 15.0 (U)	10.0 (U) - 11.0 (U)	2.0 (J) - 5.0 (U)	340.0 (U) - 350.0 (U)	340.0 (U) - 350.0 (U)	160.0 (U) - 170.0 (U)	160.0 (U) - 170.0 (U)
20.0 - 22.5	130.0 (U)	11.0 (U)	5.0 (U)	350.0 (U)	350.0 (U)	170.0 (U)	170.0 (U)
22.5 - 25.0	15.0 (U)	10.0 (U)	5.0 (U)	330.0 (U)	330.0 (U)	160.0 (U)	160.0 (U)
25.0 - 27.5	15.0 (U)	10.0 (U)	5.0 (U)	330.0 (U)	330.0 (U)	160.0 (U)	160.0 (U)
Average	4.4	1.6	2.5	80.8	107.5	0.0	0.0
116-H-2	Effluent Disposal Trench						
0.0 - 10.0	14.0 (U)	10.0 (U)	5.0 (U)	340.0 (U)	340.0 (U)	160.0 (U)	160.0 (U)
10.0 - 12.5	14.0 (U)	10.0 (U)	5.0 (U)	340.0 (U)	340.0 (U)	160.0 (U)	160.0 (U)
12.5 - 15.0	78.0 (U) - 120.0 (U)	3.0 (U) - 5.0 (U)	2.0 (U) - 5.0 (U)	340.0 (U)	340.0 (U)	160.0 (U)	160.0 (U)
15.0 - 17.5	78.0 (U) - 120.0 (U)	3.0 (U) - 5.0 (U)	2.0 (U) - 5.0 (U)	340.0 (U)	340.0 (U)	160.0 (U)	160.0 (U)
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0
116-H-3	Dummy Decontamination French Drain						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	33.0 (U)	10.0 (U)	2.0 (U)	320.0 (U)	320.0 (U)	160.0 (U)	160.0 (U)
15.0 - 17.5	33.0 (U)	10.0 (U)	2.0 (U)	320.0 (U)	320.0 (U)	160.0 (U)	160.0 (U)
17.5 - 20.0	7.0 (BJ)	3.0 (BJ)	7.0	340.0 (U)	340.0 (U)	160.0 (U)	160.0 (U)
20.0 - 22.5	7.0 (BJ)	3.0 (BJ)	7.0	340.0 (U)	340.0 (U)	160.0 (U)	160.0 (U)
Average	3.5	1.5	3.5	0.0	0.0	0.0	0.0
116-H-7	Process Effluent Retention Basin						
0.0 - 5.0	11.0 (U)	11.0 (U)	2.0 (U)	340.0 (U)	340.0 (U)	170.0 (U)	170.0 (U)
5.0 - 10.0	31.0 (U) - 41.0 (U)	13.0 (U) - 14.0 (U)	5.0 (U) - 49.0	340.0 (U) - 350.0 (U)	340.0 (U) - 350.0 (U)	170.0 (U)	170.0 (U)
10.0 - 12.5	41.0 (U)	13.0 (U)	5.0 (U)	340.0 (U)	340.0 (U)	170.0 (U)	170.0 (U)
12.5 - 15.0	36.0 (U)	22.0 (U)	3.0 (J)	350.0 (U)	350.0 (U)	170.0 (U)	170.0 (U)
15.0 - 17.5	36.0 (U)	22.0 (U)	3.0 (J)	350.0 (U)	350.0 (U)	170.0 (U)	170.0 (U)
17.5 - 20.0	23.0 (U)	10.0 (U)	5.0 (U)	330.0 (U)	330.0 (U)	160.0 (U)	160.0 (U)
20.0 - 22.5	23.0 (U)	10.0 (U)	5.0 (U)	330.0 (U)	330.0 (U)	160.0 (U)	160.0 (U)
Average	0.0	0.0	6.1	0.0	0.0	0.0	0.0

Summary of Investigation for 100-HR-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Semivolatile Organic Analysis continued Benzo(a) anthracene (ug/kg)	Benzo(a) pyrene (ug/kg)	Benzo(b) fluoranthene (ug/kg)	Benzo(ghi) perylene (ug/kg)	Benzo(k) fluoranthene (ug/kg)	bis(2-ethylhexyl) phthalate (ug/kg)	Butyl-benzylphthalate (ug/kg)	Carbazole (ug/kg)
116-H-1	Process Effluent Disposal Trench							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	940.0 (J)	810.0 (J)	890.0 (J)	410.0 (J)	760.0 (J)	340.0 (U)	340.0 (U)	NS
15.0 - 17.5	39.0 (J) - 940.0 (J)	61.0 (J) - 810.0 (J)	130.0 (J) - 890.0 (J)	340.0 (U) - 410.0 (J)	340.0 (U) - 760.0 (J)	68.0 (J) - 340.0 (U)	340.0 (U)	NS
17.5 - 20.0	78.0 (J) - 350.0 (U)	61.0 (J) - 350.0 (U)	130.0 (J) - 350.0 (U)	340.0 (U) - 350.0 (U)	340.0 (U) - 350.0 (U)	340.0 (U) - 350.0 (U)	340.0 (U) - 350.0 (U)	NS
20.0 - 22.5	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	NS
22.5 - 25.0	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	NS
25.0 - 27.5	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	NS
Average	244.8	212.7	244.2	102.5	190.0	5.7	0.0	NS
116-H-2	Effluent Disposal Trench							
0.0 - 10.0	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	NS
10.0 - 12.5	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	NS
12.5 - 15.0	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	NS
15.0 - 17.5	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	NS
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NS
116-H-3	Dummy Decontamination French Drain							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	320.0 (U)	320.0 (U)	320.0 (U)	320.0 (U)	320.0 (U)	320.0 (U)	320.0 (U)	NS
15.0 - 17.5	320.0 (U)	320.0 (U)	320.0 (U)	320.0 (U)	320.0 (U)	320.0 (U)	320.0 (U)	NS
17.5 - 20.0	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	NS
20.0 - 22.5	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	NS
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NS
116-H-7	Process Effluent Retention Basin							
0.0 - 5.0	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	NS
5.0 - 10.0	340.0 (U) - 350.0 (U)	340.0 (U) - 350.0 (U)	340.0 (U) - 350.0 (U)	340.0 (U) - 350.0 (U)	340.0 (U) - 350.0 (U)	340.0 (U) - 350.0 (U)	340.0 (U) - 350.0 (U)	NS
10.0 - 12.5	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	NS
12.5 - 15.0	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	NS
15.0 - 17.5	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	NS
17.5 - 20.0	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	NS
20.0 - 22.5	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	NS
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NS

Summary of Investigation for 100-HR-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Semivolatile Organic Analysis continued						Pesticides Analysis	
	Chrysene (ug/kg)	Fluoran-thene (ug/kg)	Fluorene (ug/kg)	Indeno(1,2,3-cd) pyrene (ug/kg)	Phenanthrene (ug/kg)	Pyrene (ug/kg)	4,4' DDD (ug/kg)	4,4' DDE (ug/kg)
116-H-1	Process Effluent Disposal Trench							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	920.0 (J)	1800.0 (J)	190.0 (J)	520.0 (J)	1500.0 (J)	1200.0 (J)	17.0 (U)	17.0 (U)
15.0 - 17.5	77.0 (J) - 920.0 (J)	63.0 (J) - 1800.0 (J)	190.0 (J) - 340.0 (U)	340.0 (U) - 520.0 (J)	35.0 (J) - 1500.0 (J)	48.0 (J) - 1200.0 (J)	16.0 (U) - 17.0 (U)	16.0 (U) - 17.0 (U)
17.5 - 20.0	77.0 (J) - 350.0 (U)	110.0 (J) - 350.0 (U)	340.0 (U) - 350.0 (U)	340.0 (U) - 350.0 (U)	35.0 (J) - 350.0 (U)	85.0 (J) - 350.0 (U)	16.0 (U) - 17.0 (U)	16.0 (U) - 17.0 (U)
20.0 - 22.5	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	17.0 (U)	17.0 (U)
22.5 - 25.0	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	16.0 (U)	16.0 (U)
25.0 - 27.5	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	16.0 (U)	16.0 (U)
Average	242.8	464.4	47.5	130.0	380.8	311.1	0.0	0.0
116-H-2	Effluent Disposal Trench							
0.0 - 10.0	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	16.0 (U)	16.0 (U)
10.0 - 12.5	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	16.0 (U)	16.0 (U)
12.5 - 15.0	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	16.0 (U)	16.0 (U)
15.0 - 17.5	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	16.0 (U)	16.0 (U)
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
116-H-3	Dummy Decontamination French Drain							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	320.0 (U)	320.0 (U)	320.0 (U)	320.0 (U)	320.0 (U)	320.0 (U)	16.0 (U)	16.0 (U)
15.0 - 17.5	320.0 (U)	320.0 (U)	320.0 (U)	320.0 (U)	320.0 (U)	320.0 (U)	16.0 (U)	16.0 (U)
17.5 - 20.0	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	16.0 (U)	16.0 (U)
20.0 - 22.5	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	16.0 (U)	16.0 (U)
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
116-H-7	Process Effluent Retention Basin							
0.0 - 5.0	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	17.0 (U)	17.0 (U)
5.0 - 10.0	340.0 (U) - 350.0 (U)	340.0 (U) - 350.0 (U)	340.0 (U) - 350.0 (U)	340.0 (U) - 350.0 (U)	340.0 (U) - 350.0 (U)	340.0 (U) - 350.0 (U)	17.0 (U)	17.0 (U)
10.0 - 12.5	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	17.0 (U)	17.0 (U)
12.5 - 15.0	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	17.0 (U)	17.0 (U)
15.0 - 17.5	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	350.0 (U)	17.0 (U)	17.0 (U)
17.5 - 20.0	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	16.0 (U)	16.0 (U)
20.0 - 22.5	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	16.0 (U)	16.0 (U)
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Summary of Investigation for 100-HR-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	gamma-Chlordane (ug/kg)	Comments
116-H-1	Process Effluent Disposal Trench	
0.0 - 10.0	NS	
10.0 - 12.5	NS	
12.5 - 15.0	84.0 (U)	
15.0 - 17.5	84.0 (U)	
17.5 - 20.0	84.0 (U)	
20.0 - 22.5	84.0 (U)	
22.5 - 25.0	80.0 (U)	
25.0 - 27.5	80.0 (U)	
Average	0.0	
116-H-2	Effluent Disposal Trench	
0.0 - 10.0	82.0 (U)	
10.0 - 12.5	82.0 (U)	
12.5 - 15.0	82.0 (U)	
15.0 - 17.5	82.0 (U)	
Average	0.0	
116-H-3	Dummy Decontamination French Drain	
0.0 - 10.0	NS	
10.0 - 12.5	NS	
12.5 - 15.0	79.0 (U)	
15.0 - 17.5	79.0 (U)	
17.5 - 20.0	80.0 (U)	
20.0 - 22.5	80.0 (U)	
Average	0.0	
116-H-7	Process Effluent Retention Basin	
0.0 - 5.0	84.0 (U)	
5.0 - 10.0	83.0 (U) - 84.0 (U)	
10.0 - 12.5	84.0 (U)	
12.5 - 15.0	86.0 (U)	
15.0 - 17.5	86.0 (U)	
17.5 - 20.0	80.0 (U)	
20.0 - 22.5	80.0 (U)	
Average	0.0	

Summary of Investigation for 100-HR-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Volatile Organic Analysis			Semivolatile Organic Analysis			
	Acetone(c) (ug/kg)	Methylene Chloride(d) (ug/kg)	Toluene(e) (ug/kg)	Acena-phthene (ug/kg)	Anthracene (ug/kg)	Aroclor-1254 (ug/kg)	Aroclor-1260 (ug/kg)
116-H-9	Confinement Seal Pit Drainage Crib						
0.0 - 10.0	19.0 (U)	14.0 (U)	5.0 (U)	340.0 (U)	340.0 (U)	160.0 (U)	160.0 (U)
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	35.0 (U)	16.0 (U)	3.0 (U)	330.0 (U)	330.0 (U)	160.0 (U)	160.0 (U)
20.0 - 22.5	20.0 (U) - 35.0 (U)	10.0 (U) - 16.0 (U)	3.0 (U) - 5.0 (U)	320.0 (U) - 330.0 (U)	320.0 (U) - 330.0 (U)	160.0 (U)	160.0 (U)
22.5 - 25.0	20.0 (U)	10.0 (U)	5.0 (U)	320.0 (U)	320.0 (U)	160.0 (U)	160.0 (U)
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0
116-H-5	Process Effluent Outfall Structure						
116-H-7	Sludge Burial Trench						
132-H-3	Effluent Pumping Station						
132-H-2	Exhaust Air Filter Building						
116-H-4	Pluto Crib						
132-H-1	Reactor Exhaust Stack						
	Process Effluent Pipelines						
1607-H2	Septic Tank						
Sludge Samples	450.0 (UJ) - 770.0 (UJ)	45.0 (UJ) - 91.0 (UJ)	23.0 (UJ) - 45.0 (UJ)	NS	NS	NS	NS
Average	0.0	0.0	0.0	NS	NS	NS	NS
Water Samples(b)	10.0 (UJ) - 10.0 (U)	10.0 (UJ) - 300.0 (J)	5.0 (UJ) - 5.0 (U)	NS	NS	NS	NS
1607-H4	Septic Tank						
Surface Soil from Tank Leach Field	17.0 - 24.0 (B)	10.0 (U)	10.0 (U)	330.0 (U) - 340.0 (U)	330.0 (U) - 340.0 (U)	33.0 (U) - 34.0 (U)	33.0 (U) - 34.0 (U)
Soil from Tank Discharge Pipe	23.0 (B)	6.0 (J)	4.0 (J)	130.0 (J)	320.0 (J)	33.0 (U)	33.0 (U)
Average	21.8	3.0	2.0	65.0	160.0	0.0	0.0
	Electrical Facilities						
Surface Soil	NS	NS	NS	NS	NS	7.0 (U) - 350.0	7.0 (U) - 1200.0 (J)
Average	NS	NS	NS	NS	NS	175.0	600.0

Summary of Investigation for 100-HR-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Semivolatile Organic Analysis continued							
	Benzo(a) anthracene (ug/kg)	Benzo(a) pyrene (ug/kg)	Benzo(b) fluoranthene (ug/kg)	Benzo(ghi) perylene (ug/kg)	Benzo(k) fluoranthene (ug/kg)	bis(2-ethylhexyl) phthalate (ug/kg)	Butyl-benzylphthalate (ug/kg)	Carbazole (ug/kg)
116-H-9	Confinement Seal Pit Drainage Crib							
0.0 - 10.0	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	NS
20.0 - 22.5	320.0 (U) - 330.0 (U)	320.0 (U) - 330.0 (U)	320.0 (U) - 330.0 (U)	320.0 (U) - 330.0 (U)	320.0 (U) - 330.0 (U)	320.0 (U) - 330.0 (U)	320.0 (U) - 330.0 (U)	NS
22.5 - 25.0	320.0 (U)	320.0 (U)	320.0 (U)	320.0 (U)	320.0 (U)	320.0 (U)	320.0 (U)	NS
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	NS
116-H-5	Process Effluent Outfall Structure							
116-H-7	Sludge Burial Trench							
132-H-3	Effluent Pumping Station							
132-H-2	Exhaust Air Filter Building							
116-H-4	Pluto Crib							
132-H-1	Reactor Exhaust Stack							
	Process Effluent Pipelines							
1607-H2	Septic Tank							
Sludge Samples	NS	NS	NS	NS	NS	NS	NS	NS
Average	NS	NS	NS	NS	NS	NS	NS	NS
Water Samples(b)	NS	NS	NS	NS	NS	NS	NS	NS
1607-H4	Septic Tank							
Surface Soil from Tank Leach Field	330.0 (U) - 340.0 (U)	330.0 (U) - 340.0 (U)	330.0 (U) - 340.0 (U)	330.0 (U) - 340.0 (U)	330.0 (U) - 340.0 (U)	330.0 (U) - 340.0 (U)	330.0 (U) - 340.0 (U)	330.0 (U) - 340.0 (U)
Soil from Tank Discharge Pipe	1800.0	940.0	2400.0	460.0 (J)	680.0 (U)	680.0 (U)	680.0 (U)	150.0 (J)
Average	900.0	470.0	1200.0	230.0	0.0	0.0	0.0	75.0
	Electrical Facilities							
Surface Soil	NS	NS	NS	NS	NS	NS	NS	NS
Average	NS	NS	NS	NS	NS	NS	NS	NS

Summary of Investigation for 100-HR-1 Operable Unit - Organic Constituents

	Semivolatile Organic Analysis continued						Pesticides Analysis	
Site Identification with depth (ft) of sample collection	Chrysene (ug/kg)	Fluoran-thene (ug/kg)	Fluorene (ug/kg)	Indeno(1,2,3-cd) pyrene (ug/kg)	Phenanthrene (ug/kg)	Pyrene (ug/kg)	4,4' DDD (ug/kg)	4,4' DDE (ug/kg)
116-H-9	Confinement Seal Pit Drainage Crib							
0.0 - 10.0	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	340.0 (U)	16.0 (U)	16.0 (U)
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	330.0 (U)	16.0 (U)	16.0 (U)
20.0 - 22.5	320.0 (U) - 330.0 (U)	320.0 (U) - 330.0 (U)	320.0 (U) - 330.0 (U)	320.0 (U) - 330.0 (U)	320.0 (U) - 330.0 (U)	320.0 (U) - 330.0 (U)	16.0 (U)	16.0 (U)
22.5 - 25.0	320.0 (U)	320.0 (U)	320.0 (U)	320.0 (U)	320.0 (U)	320.0 (U)	16.0 (U)	16.0 (U)
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
116-H-5	Process Effluent Outfall Structure							
116-H-7	Sludge Burial Trench							
132-H-3	Effluent Pumping Station							
132-H-2	Exhaust Air Filter Building							
116-H-4	Pluto Crib							
132-H-1	Reactor Exhaust Stack							
	Process Effluent Pipelines							
1607-H2	Septic Tank							
Sludge Samples	NS	NS	NS	NS	NS	NS	NS	NS
Average	NS	NS	NS	NS	NS	NS	NS	NS
Water Samples(b)	NS	NS	NS	NS	NS	NS	NS	NS
1607-H4	Septic Tank							
Surface Soil from Tank Leach Field	330.0 (U) - 340.0 (U)	330.0 (U) - 340.0 (U)	330.0 (U) - 340.0 (U)	330.0 (U) - 340.0 (U)	330.0 (U) - 340.0 (U)	330.0 (U) - 340.0 (U)	3.2 (U) - 3.4 (U)	3.2 (U) - 3.4 (U)
Soil from Tank Discharge Pipe	920.0	2900.0	110.0 (J)	480.0 (J)	1600.0	2700.0	110.0	12.0
Average	460.0	1450.0	55.0	240.0	800.0	1350.0	55.0	6.0
	Electrical Facilities							
Surface Soil	NS	NS	NS	NS	NS	NS	NS	NS
Average	NS	NS	NS	NS	NS	NS	NS	NS

Summary of Investigation for 100-HR-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	gamma-Chlordane (ug/kg)	Comments
116-H-9	Confinement Seal Pit Drainage Crib	
0.0 - 10.0	81.0 (U)	
10.0 - 12.5	NS	
12.5 - 15.0	NS	
15.0 - 17.5	NS	
17.5 - 20.0	80.0 (U)	
20.0 - 22.5	78.0 (U) - 80.0 (U)	
22.5 - 25.0	78.0 (U)	
Average	0.0	
116-H-5	Process Effluent Outfall Structure	No LFI Investigation
116-H-7	Sludge Burial Trench	No LFI Investigation
132-H-3	Effluent Pumping Station	No LFI Investigation
132-H-2	Exhaust Air Filter Building	No LFI Investigation
116-H-4	Pluto Crib	No LFI Investigation
132-H-1	Reactor Exhaust Stack	No LFI Investigation
	Process Effluent Pipelines	No LFI Investigation
1607-H2	Septic Tank	
Sludge Samples	NS	
Average	NS	
Water Samples(b)	NS	
1607-H4	Septic Tank	
Surface Soil from Tank Leach Field	1.7 (U)	
Soil from Tank Discharge Pipe	18.0	
Average	9.0	
	Electrical Facilities	
Surface Soil	NS	
Average	NS	

(b) Units for water samples are ug/l

(c) Analyte is a typical laboratory contaminant and detection is probably laboratory contamination.

(d) Data for this sample was not validated. Other samples from the lab had methylene chloride in lab blank. Detection is probably laboratory contamination.

(e) Data for this sample was not validated. Analyte is a typical lab contaminant and detection is probably laboratory contamination.

Summary of Investigation for Operable Unit 100-NR-1 - Organic Constituents

Site Identification with depth (ft) of sample collection	Volatile Organic Analysis										
	Acetone (ug/kg)	Benzene (ug/kg)	2-Butanone (ug/kg)	Carbon Disulfide (ug/kg)	Carbon Tetrachloride (ug/kg)	Chloroform (ug/kg)	Ethylbenzene (ug/kg)	2-Hexanone (ug/kg)	4-Methyl-2-Pentanone (ug/kg)	Methylene Chloride (ug/kg)	1,1,1-Trichloro-ethane (ug/kg)
116-N-2	Chemical Waste Storage Tank										
0.0 - 6.0	12.0 (B)	ND	7.0 (J)	ND	ND	ND	ND	ND	ND	2.0 (J)	2.00 (J)
6.0 - 15.0	14.0 (B)	ND	ND	ND	ND	ND	ND	ND	ND	2.0 (J)	ND
< 15.0	13.0 (B)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average	13.0	0.0	2.3	0.0	0.0	0.0	0.0	0.0	0.0	1.3	0.7
UPR-100-N-9 & UPR-100-N-14											
0.0 - 6.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
6.0 - 15.0	23.0 (B)	ND	ND	ND	ND	ND	ND	ND	ND	2.0 (J)	ND
<15.0	22.0 (B)	ND	ND	ND	ND	ND	ND	ND	ND	2.0 (J)	ND
Average	22.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.0	0.0
120-N-1	Percolation Pond										
0.0 - 6.0	16.0 (B) - 19.0 (B)	ND	ND	ND	ND	ND	ND	ND	ND	4.0 (J) - 23.0	ND
6.0 - 15.0	13.0 (B) - 54.0 (B)	1.00 (J)	ND	ND	ND	ND	ND	ND	ND	ND	ND
<15.0	23.0 (B) - 44.0 (B)	ND	ND	ND	ND	2.0 (J)	ND	ND	ND	9.0 (BJ) - 10.0 (J)	ND
Average	28.2	0.3	0.0	0.0	0.0	0.7	0.0	0.0	0.0	7.7	0.0
120-N-2	Surface Impoundment										
0.0 - 6.0	13.0 (B)	ND	ND	ND	ND	ND	ND	ND	ND	2.0 (J)	ND
6.0 - 15.0	15.0 (B)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
<15.0	23.0 (B) - 26.0 (B)	ND	4.0 (BJ)	ND	ND	3.0 (J)	ND	1.0 (BJ)	ND	5.0 (J)	ND
Average	17.5	0.0	1.3	0.0	0.0	1.0	0.0	0.3	0.0	2.3	0.0
UPR-100-N-4 & UPR-100-N-8											
0.0 - 6.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
6.0 - 15.0	28.0 (B)	ND	ND	ND	ND	ND	ND	ND	ND	6.0 (J)	ND
<15.0	28.0 (B)	ND	ND	ND	ND	ND	ND	ND	ND	6.0 (J)	ND
Average	28.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	6.0	0.0
116-N-1											
0.0 - 6.0	12.0 (B) - 17.0 (B)	ND	ND	ND - 1.0 (J)	ND	ND	ND	ND	ND	3.0 (J) - 4.0 (J)	ND
6.0 - 15.0	22.0 (B)	ND	ND	ND	ND	ND	ND	ND	ND	4.0 (J)	ND
<15.0	51.0 (B) - 140.0 (B)	ND	ND	ND - 2.0 (J)	8.0 (J)	3.0 (BJ)	ND	ND	7.0 (J)	28.0 - 63.0	ND
Average	44.0	0.0	0.0	0.5	2.7	1.0	0.0	0.0	2.3	17.7	0.0

Summary of Investigation for Operable Unit 100-NR-1 - Organic Constituents

Site Identification with depth (ft) of sample collection	Volatile Organic Analysis continued		Semi-volatile Organic Analysis									
	Toluene (ug/kg)	Xylenes (total) (ug/kg)	Anthracene (ug/kg)	Benzo(a) anthracene (ug/kg)	Benzo(a) pyrene (ug/kg)	Benzo(b) fluoranthene (ug/kg)	bis(2-ethylhexyl)-phthalate (ug/kg)	Chrysene (ug/kg)	Di-n-butyl-phthalate (ug/kg)	1,4-Dichloro-benzene (ug/kg)	Diethyl phthalate (ug/kg)	Flouranthene (ug/kg)
116-N-2	Chemical Waste Storage Tank											
0.0 - 6.0	1.0 (J)	ND	38.0 (J)	140.0 (J)	53.0 (J)	120.0 (J)	ND	120.0 (J)	130.0 (BJ)	51.0 (J)	78.0 (J)	260.0 (J)
6.0 - 15.0	1.0 (J)	ND	ND	ND	ND	ND	ND	ND	ND	ND	130.0 (BJ)	ND
< 15.0	ND	ND	ND	ND	ND	ND	ND	ND	20.0 (BJ)	ND	50.0 (J)	ND
Average	0.7	0.0	12.7	46.7	17.7	40.0	0.0	40.0	50.0	17.0	86.0	86.7
UPR-100-N-9 & UPR-100-N-14												
0.0 - 6.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
6.0 - 15.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
<15.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
120-N-1	Percolation Pond											
0.0 - 6.0	3.0 (J) - 8.0 (J)	ND	ND	ND	ND	ND	58.0 (J)	ND	140.0 (BJ) - 170.0 (J)	ND	ND	ND
6.0 - 15.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
<15.0	2.0 (J) - 8.0 (U)	ND	ND	ND	ND	ND	33.0 (J) - 150.0 (J)	ND	110.0 (BJ) - 84.0 (J)	ND	120 (J)	ND
Average	2.2	0.0	0.0	0.0	0.0	0.0	49.8	0.0	84.0	0.0	40.0	0.0
120-N-2	Surface Impoundment											
0.0 - 6.0	11.0 (J)	ND	ND	ND	ND	ND	55 (J)	ND	150.0 (BJ)	ND	ND	ND
6.0 - 15.0	1.0 (J)	ND	ND	ND	ND	ND	ND	ND	86.0 (BJ)	ND	ND	ND
<15.0	2.0 (J)	2.0 (J)	ND	ND	ND	ND	180 (J)	ND	230.0 (BJ)	ND	48.0 (J)	ND
Average	4.7	0.7	0.0	0.0	0.0	0.0	78.3	0.0	155.3	0.0	16.0	0.0
UPR-100-N-4 & UPR-100-N-8												
0.0 - 6.0	NS	NS	ND	63.0 (J)	ND	69.0 (J)	48.0 (J)	62.0 (J)	250.0 (BJ)	ND	ND	99.0 (J)
6.0 - 15.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
<15.0	2.0 (J)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average	1.0	0.0	0.0	21.0	0.0	23.0	16.0	20.7	83.3	0.0	0.0	33.0
116-N-1												
0.0 - 6.0	2.0 (J)	ND	ND	ND	ND	ND	ND	ND	51.0 (J) - 63.0 (U)	ND	ND	ND
6.0 - 15.0	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
<15.0	3.0 (J)	ND	ND	ND	ND	ND	61.0 (J) - 5430.0 (U)	ND	100.0 (BJ) - 110.0 (BJ)	ND	ND	ND
Average	1.7	0.0	0.0	0.0	0.0	0.0	915.2	0.0	43.5	0.0	0.0	0.0

Summary of Investigation for Operable Unit 100-NR-1 - Organic Constituents

Site Identification with depth (ft) of sample collection	Semi-volatile Organic Analysis continued						Comments
	Fluorene (ug/kg)	2-Methynaphthalene (ug/kg)	Naphthalene (ug/kg)	N-Nitrosodiphenylamine (ug/kg)	Phenanthrene (ug/kg)	Pyrene (ug/kg)	
116-N-2	Chemical Waste Storage Tank						
0.0 - 6.0	ND	ND	ND	ND	150.0 (J)	320.0 (J)	
6.0 - 15.0	ND	ND	ND	ND	ND	ND	
< 15.0	ND	ND	ND	ND	ND	ND	
Average	0.0	0.0	0.0	0.0	50.0	106.7	
UPR-100-N-9 & UPR-100-N-14							
0.0 - 6.0	NS	NS	NS	NS	NS	NS	
6.0 - 15.0	ND	ND	ND	ND	ND	ND	
<15.0	ND	ND	ND	ND	ND	ND	
Average	0.0	0.0	0.0	0.0	0.0	0.0	
120-N-1	Percolation Pond						
0.0 - 6.0	ND	ND	ND	ND	ND	ND	
6.0 - 15.0	ND	ND	ND	ND	ND	ND	
<15.0	ND	ND	ND	ND	ND	ND	
Average	0.0	0.0	0.0	0.0	0.0	0.0	
120-N-2	Surface Impoundment						
0.0 - 6.0	ND	ND	ND	ND	ND	ND	
6.0 - 15.0	ND	ND	ND	ND	ND	ND	
<15.0	ND	ND	ND	ND	ND	ND	
Average	0.0	0.0	0.0	0.0	0.0	0.0	
UPR-100-N-4 & UPR-100-N-8							
0.0 - 6.0	ND	ND	ND	ND	95.0 (J)	110.0 (J)	
6.0 - 15.0	ND	ND	ND	ND	ND	ND	
<15.0	ND	ND	ND	ND	ND	ND	
Average	0.0	0.0	0.0	0.0	31.7	36.7	
116-N-1							
0.0 - 6.0	ND	ND	ND	ND	ND	ND	
6.0 - 15.0	ND	ND	ND	110.0 (J)	ND	ND	
<15.0	ND	ND	ND	ND	ND	ND	
Average	0.0	0.0	0.0	36.7	0.0	0.0	

Summary of Investigation for Operable Unit 100-NR-1 - Organic Constituents

Site Identification with depth (ft) of sample collection	Volatile Organic Analysis										
	Acetone (ug/kg)	Benzene (ug/kg)	2-Butanone (ug/kg)	Carbon Disulfide (ug/kg)	Carbon Tetrachloride (ug/kg)	Chloroform (ug/kg)	Ethylbenzene (ug/kg)	2-Hexanone (ug/kg)	4-Methyl-2-Pentanone (ug/kg)	Methylene Chloride (ug/kg)	1,1,1-Trichloro-ethane (ug/kg)
UPR-100-N-17	Diesel Oil Supply Line Leak										
0.0 - 6.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
6.0 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
<15.0	2800.0	190.0 (J)	4.0 (J)	ND	ND	ND	330.0 (J)	ND	ND	ND	ND
Average	2800.0	190.0	4.0	0.0	0.0	0.0	330.0	0.0	0.0	0.0	0.0

Summary of Investigation for Operable Unit 100-NR-1 - Organic Constituents

Site Identification with depth (ft) of sample collection	Volatile Organic Analysis continued		Semi-volatile Organic Analysis									
	Toluene (ug/kg)	Xylenes (total) (ug/kg)	Anthracene (ug/kg)	Benzo(a) anthracene (ug/kg)	Benzo(a) pyrene (ug/kg)	Benzo(b) fluoranthene (ug/kg)	bis(2-ethylhexyl)-phthalate (ug/kg)	Chrysene (ug/kg)	Di-n-butyl-phthalate (ug/kg)	1,4-Dichloro-benzene (ug/kg)	Diethyl phthalate (ug/kg)	Flouranthene (ug/kg)
UPR-100-N-17	Diesel Oil Supply Line Leak											
0.0 - 6.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
6.0 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
<15.0	1.0 (J)	1300.0 (J)	6300.00 (D)	ND	ND	ND	ND	ND	420.0 (B)	ND	ND	ND
Average	1.0	1300.0	6300.0	0.0	0.0	0.0	0.0	0.0	420.0	0.0	0.0	0.0

Summary of Investigation for Operable Unit 100-NR-1 - Organic Constituents

Site Identification with depth (ft) of sample collection	Semi-volatile Organic Analysis continued						Comments
	Fluorene (ug/kg)	2-Methynap-thalene (ug/kg)	Naphthalene (ug/kg)	N-Nitrosodi-phenylamine (ug/kg)	Phenanthrene (ug/kg)	Pyrene (ug/kg)	
UPR-100-N-17	Diesel Oil Supply Line Leak						
0.0 - 6.0	NS	NS	NS	NS	NS	NS	
6.0 - 15.0	NS	NS	NS	NS	NS	NS	
<15.0	1700.0 (DJ)	13000.0 (D)	4100.0 (D)	ND	2500.0 (DJ)	240.0 (J)	
Average	1700.0	13000.0	4100.0	0.0	2500.0	240.0	

Summary of Investigation for 300-FF-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Volatile Organic Analysis						Semi-Volatile Organic Analysis
	Carbon Disulfide (ug/kg)	1,2 - Dichloroethene (total) (ug/kg)	Tetrachloro-ethene (ug/kg)	Toluene (ug/kg)	Trichloroethene (ug/kg)	Vinyl Chloride (ug/kg)	Anthracene (ug/kg)
316-1	South Process Pond						
0.0 - 2.5	5.0 (U) - 39.0 (U)	5.0 (U) - 7.0 (U)	5.0 (U) - 7.0 (U)	2.0 (UJ) - 8.0 (U)	2.0 (UJ) - 5.0 (U)	11.0 (UJ) - 14.0 (U)	RA
2.5 - 5.0	5.0 (U)	5.0 (U)	5.0 (U)	5.0 (U)	5.0 (U)	10.0 (U) - 11.0 (U)	RA
5.0 - 10.0	5.0 (U)	5.0 (U)	5.0 (U)	2.0 (UJ) - 5.0 (U)	5.0 (U)	10.0 (U) - 11.0 (U)	RA
10.0 - 15.0	5.0 (U) - 14.0 (UJ)	5.0 (U) - 14.0 (U)	5.0 (U) - 14.0 (U)	5.0 (U) - 14.0 (U)	5.0 (U) - 14.0 (U)	10.0 (U) - 27.0 (U)	RA
15.0 - 20.0	5.0 (UJ) - 6.0 (U)	5.0 (U) - 6.0 (U)	5.0 (U) - 6.0 (U)	5.0 (U) - 6.0 (U)	5.0 (U) - 6.0 (U)	11.0 (U)	RA
20.0 - 25.0	5.0 (U) - 6.0 (UJ)	5.0 (U) - 6.0 (U)	5.0 (U) - 6.0 (U)	5.0 (U) - 6.0 (U)	5.0 (U) - 6.0 (U)	11.0 (U)	RA
25.0 - 30.0	5.0 (U) - 6.0 (UJ)	5.0 (U) - 14.0 (U)	5.0 (U) - 14.0 (U)	5.0 (U) - 14.0 (U)	5.0 (U) - 14.0 (U)	10.0 (U) - 11.0 (U)	RA
30.0 - 35.0	5.0 (U) - 14.0 (UJ)	5.0 (U) - 6.0 (U)	5.0 (U) - 6.0 (U)	2.0 (UJ) - 6.0 (U)	5.0 (U) - 6.0 (U)	11.0 (U) - 28.0 (U)	RA
35.0 - 40.0	5.0 (U) - 17.0 (U)	5.0 (U) - 6.0 (U)	5.0 (U) - 6.0 (U)	3.0 (UJ) - 6.0 (U)	5.0 (U) - 6.0 (U)	11.0 (U) - 13.0 (U)	RA
40.0 - 45.0	6.0 (U)	6.0 (U)	6.0 (U)	6.0 (U)	6.0 (U)	11.0 (U) - 12.0 (U)	RA
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0
316-2	North Process Pond						
0.0 - 2.5	4.0 (UJ) - 27.0 (U)	5.0 (U) - 27.0 (U)	5.0 (U) - 27.0 (U)	5.0 (U) - 27.0 (U)	5.0 (U) - 27.0 (U)	11.0 (U) - 54.0 (U)	RA
2.5 - 5.0	2.0 (UJ) - 42.0 (UJ)	5.0 (U) - 27.0 (U)	5.0 (U) - 27.0 (U)	1.0 (UJ) - 150.0 (J)	5.0 (U) - 23.0 (J)	10.0 (U) - 54.0 (U)	RA
5.0 - 10.0	4.0 (UJ) - 27.0 (U)	5.0 (U) - 27.0 (U)	5.0 (U) - 27.0 (U)	1.0 (UJ) - 27.0 (U)	5.0 (U) - 27.0 (U)	10.0 (U) - 53.0 (U)	RA
10.0 - 15.0	2.0 (UJ) - 27.0 (U)	5.0 (U) - 27.0 (U)	5.0 (U) - 27.0 (U)	5.0 (U) - 27.0 (U)	5.0 (U) - 27.0 (U)	10.0 (U) - 55.0 (U)	RA
15.0 - 20.0	5.0 (U) - 28.0 (U)	5.0 (U) - 28.0 (U)	5.0 (U) - 28.0 (U)	2.0 (UJ) - 28.0 (U)	5.0 (U) - 28.0 (U)	11.0 (U) - 56.0 (U)	RA
20.0 - 25.0	4.0 (UJ) - 54.0 (U)	5.0 (U) - 29.0 (U)	5.0 (U) - 29.0 (U)	2.0 (UJ) - 29.0 (U)	5.0 (U) - 29.0 (U)	11.0 (U) - 57.0 (U)	RA
25.0 - 30.0	6.0 (U) - 30.0 (U)	6.0 (U) - 30.0 (U)	2.0 (UJ) - 30.0 (U)	2.0 (UJ) - 30.0 (U)	6.0 (U) - 30.0 (U)	12.0 (U) - 60.0 (U)	RA
30.0 - 35.0	4.0 (UJ) - 29.0 (U)	5.0 (U) - 29.0 (U)	3.0 (UJ) - 29.0 (U)	2.0 (UJ) - 29.0 (U)	6.0 (U) - 29.0 (U)	11.0 (U) - 57.0 (U)	RA
Average	0.0	0.0	0.0	5.4	0.8	0.0	0.0
316-5	Process Trenches (Data from East Trench Post-ERA)						
0.0 - 2.5	5.0 (U)	5.0 (U)	5.0 (U)	5.0 (U)	5.0 (U)	11.0 (U)	32.0 (U) - 33.0 (U)
316-5	Process Trenches (Test Pit Data from West Trench)						
0.0 - 2.5	5.0 (U) - 6.0 (U)	5.0 (U) - 6.0 (U)	5.0 (U) - 6.0 (U)	5.0 (U) - 6.0 (U)	5.0 (U) - 6.0 (U)	11.0 (U) - 12.0 (U)	360.0 (U)
2.5 - 5.0	6.0 (U)	6.0 (U)	6.0 (U)	6.0 (U)	6.0 (U)	11.0 (U)	NR
5.0 - 10.0	270.0 (U)	270.0 (U)	110.0 (J)	270.0 (UJ)	100.0 (J)	540.0 (J)	NR
10.0 - 15.0	280.0 (U)	280.0 (U)	280.0 (U)	280.0 (UJ)	280.0 (U)	560.0 (U)	NR
15.0 - 20.0	6.0 (U)	6.0 (U)	6.0 (U)	6.0 (U)	6.0 (U)	12.0 (U)	NR
Average	0.0	0.0	24.4	0.0	22.2	120.0	0.0

Summary of Investigation for 300-FF-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Semi-Volatile Organic Analysis continued: Aroclor 1248 (ug/kg)	Aroclor 1254 (ug/kg)	Benzo(a) anthracene (ug/kg)	Benzo(a) pyrene (ug/kg)	Benzo(b) fluoranthene (ug/kg)	Benzo(k) fluoranthene (ug/kg)	Benzo(ghi) perylene (ug/kg)
316-1	South Process Pond						
0.0 - 2.5	84.0 (U) - 5500.0 (DX)	76.0 (J) - 9000.0 (D)	RA	RA	RA	RA	RA
2.5 - 5.0	81.0 (U) - 85.0 (U)	150.0 (J) - 260.0	RA	RA	RA	RA	RA
5.0 - 10.0	81.0 (U) - 88.0 (U)	58.0 (J) - 210.0	RA	RA	RA	RA	RA
10.0 - 15.0	79.0 (U) - 87.0 (UJ)	160.0 (U) - 170.0 (UJ)	RA	RA	RA	RA	RA
15.0 - 20.0	85.0 (U) - 110.0	120.0 (J) - 170.0 (U)	RA	RA	RA	RA	RA
20.0 - 25.0	85.0 (U) - 90.0 (U)	170.0 (U) - 180.0 (U)	RA	RA	RA	RA	RA
25.0 - 30.0	81.0 (UJ) - 87.0 (U)	160.0 (U) - 180.0 (U)	RA	RA	RA	RA	RA
30.0 - 35.0	87.0 (UJ) - 98.0 (U)	170.0 (U) - 200.0 (U)	RA	RA	RA	RA	RA
35.0 - 40.0	86.0 (U) - 98.0 (U)	170.0 (U) - 200.0 (U)	RA	RA	RA	RA	RA
40.0 - 45.0	87.0 (U) - 98.0 (U)	170.0 (U) - 200.0 (U)	RA	RA	RA	RA	RA
Average	158.9	285.1	0.0	0.0	0.0	0.0	0.0
316-2	North Process Pond						
0.0 - 2.5	84.0 (U) - 630.0 (DX)	170.0 (U) - 460.0 (DX)	RA	RA	RA	RA	RA
2.5 - 5.0	80.0 (U) - 1000.0 (DX)	160.0 (U) - 170.0 (U)	RA	RA	RA	RA	RA
5.0 - 10.0	81.0 (U) - 460.0 (DJX)	160.0 (U) - 6300.0 (DX)	RA	RA	RA	RA	RA
10.0 - 15.0	83.0 (U) - 140.0 (X)	140.0 (J) - 180.0 (U)	RA	RA	RA	RA	RA
15.0 - 20.0	84.0 (U) - 89.0 (U)	33.0 (J) - 180.0 (U)	RA	RA	RA	RA	RA
20.0 - 25.0	84.0 (U) - 90.0 (U)	170.0 (U) - 180.0 (U)	RA	RA	RA	RA	RA
25.0 - 30.0	92.0 (U) - 97.0 (U)	180.0 (U) - 190.0 (U)	RA	RA	RA	RA	RA
30.0 - 35.0	89.0 (U) - 110.0 (U)	180.0 (U) - 220.0 (U)	RA	RA	RA	RA	RA
Average	101.1	478.8	0.0	0.0	0.0	0.0	0.0
316-5	Process Trenches (Data from East Trench Post-ERA)						
0.0 - 2.5	84.0 (U) - 87.0 (U)	170.0 (U)	32.0 (U) - 33.0 (U)	32.0 (U) - 33.0 (U)	32.0 (U) - 33.0 (U)	32.0 (U) - 33.0 (U)	32.0 (U) - 33.0 (U)
316-5	Process Trenches (Test Pit Data from West Trench)						
0.0 - 2.5	88.0 (UJ) - 89.0 (U)	17.0 (J) - 31.0 (J)	360.0 (U)	360.0 (U)	360.0 (U)	360.0 (U)	360.0 (U)
2.5 - 5.0	91.0 (U)	27.0 (J)	NR	NR	NR	NR	NR
5.0 - 10.0	85.0 (U)	17.0 (J)	NR	NR	NR	NR	NR
10.0 - 15.0	90.0 (U)	180.0 (U)	NR	NR	NR	NR	NR
15.0 - 20.0	98.0 (U)	200.0 (U)	NR	NR	NR	NR	NR
Average	0.0	9.7	0.0	0.0	0.0	0.0	0.0

Summary of Investigation for 300-FF-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Semi-Volatile Organic Analysis continued: bis(2-ethylhexyl)-phthalate (ug/kg)	Butyl-benzylphthalate (ug/kg)	Chrysene (ug/kg)	4-Chloroaniline (ug/kg)	Dibenzo-furan (ug/kg)	Fluoranthene (ug/kg)	Fluorene (ug/kg)
316-1	South Process Pond						
0.0 - 2.5	RA	RA	RA	RA	RA	RA	RA
2.5 - 5.0	RA	RA	RA	RA	RA	RA	RA
5.0 - 10.0	RA	RA	RA	RA	RA	RA	RA
10.0 - 15.0	RA	RA	RA	RA	RA	RA	RA
15.0 - 20.0	RA	RA	RA	RA	RA	RA	RA
20.0 - 25.0	RA	RA	RA	RA	RA	RA	RA
25.0 - 30.0	RA	RA	RA	RA	RA	RA	RA
30.0 - 35.0	RA	RA	RA	RA	RA	RA	RA
35.0 - 40.0	RA	RA	RA	RA	RA	RA	RA
40.0 - 45.0	RA	RA	RA	RA	RA	RA	RA
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0
316-2	North Process Pond						
0.0 - 2.5	RA	RA	RA	RA	RA	RA	RA
2.5 - 5.0	RA	RA	RA	RA	RA	RA	RA
5.0 - 10.0	RA	RA	RA	RA	RA	RA	RA
10.0 - 15.0	RA	RA	RA	RA	RA	RA	RA
15.0 - 20.0	RA	RA	RA	RA	RA	RA	RA
20.0 - 25.0	RA	RA	RA	RA	RA	RA	RA
25.0 - 30.0	RA	RA	RA	RA	RA	RA	RA
30.0 - 35.0	RA	RA	RA	RA	RA	RA	RA
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0
316-5	Process Trenches (Data from East Trench Post-ERA)						
0.0 - 2.5	32.0 (U) - 88.0 (BU)	32.0 (U) - 33.0 (U)	32.0 (U) - 33.0 (U)	32.0 (UJ) - 33.0 (UJ)	32.0 (U) - 33.0 (U)	32.0 (U) - 33.0 (U)	32.0 (U) - 33.0 (U)
316-5	Process Trenches (Test Pit Data from West Trench)						
0.0 - 2.5	360.0 (U)	360.0 (U)	360.0 (U)	360.0 (UJ)	360.0 (U)	360.0 (U)	360.0 (U)
2.5 - 5.0	NR	NR	NR	NR	NR	NR	NR
5.0 - 10.0	NR	NR	NR	NR	NR	NR	NR
10.0 - 15.0	NR	NR	NR	NR	NR	NR	NR
15.0 - 20.0	NR	NR	NR	NR	NR	NR	NR
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Summary of Investigation for 300-FF-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Semi-Volatile Organic Analysis continued Indeno(1,2,3-cd) pyrene (ug/kg)	2-Methylna-phthalene (ug/kg)	4-Methy-phenol (ug/kg)	Naphthalene (ug/kg)	N-nitroso-diphenylamine (ug/kg)	Phenan-threne (ug/kg)	Pyrene (ug/kg)
316-1	South Process Pond						
0.0 - 2.5	RA	RA	RA	RA	RA	RA	RA
2.5 - 5.0	RA	RA	RA	RA	RA	RA	RA
5.0 - 10.0	RA	RA	RA	RA	RA	RA	RA
10.0 - 15.0	RA	RA	RA	RA	RA	RA	RA
15.0 - 20.0	RA	RA	RA	RA	RA	RA	RA
20.0 - 25.0	RA	RA	RA	RA	RA	RA	RA
25.0 - 30.0	RA	RA	RA	RA	RA	RA	RA
30.0 - 35.0	RA	RA	RA	RA	RA	RA	RA
35.0 - 40.0	RA	RA	RA	RA	RA	RA	RA
40.0 - 45.0	RA	RA	RA	RA	RA	RA	RA
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0
316-2	North Process Pond						
0.0 - 2.5	RA	RA	RA	RA	RA	RA	RA
2.5 - 5.0	RA	RA	RA	RA	RA	RA	RA
5.0 - 10.0	RA	RA	RA	RA	RA	RA	RA
10.0 - 15.0	RA	RA	RA	RA	RA	RA	RA
15.0 - 20.0	RA	RA	RA	RA	RA	RA	RA
20.0 - 25.0	RA	RA	RA	RA	RA	RA	RA
25.0 - 30.0	RA	RA	RA	RA	RA	RA	RA
30.0 - 35.0	RA	RA	RA	RA	RA	RA	RA
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0
316-5	Process Trenches (Data from East Trench Post-ERA)						
0.0 - 2.5	32.0 (U) - 33.0 (U)	32.0 (U) - 33.0 (U)	32.0 (U) - 33.0 (U)	32.0 (U) - 33.0 (U)	32.0 (JU) - 34.0 (JU)	32.0 (U) - 33.0 (U)	32.0 (U) - 33.0 (U)
316-5	Process Trenches (Test Pit Data from West Trench)						
0.0 - 2.5	360.0 (U)	360.0 (U)	360.0 (U)	360.0 (U)	360.0 (U)	360.0 (U)	360.0 (U)
2.5 - 5.0	NR	NR	NR	NR	NR	NR	NR
5.0 - 10.0	NR	NR	NR	NR	NR	NR	NR
10.0 - 15.0	NR	NR	NR	NR	NR	NR	NR
15.0 - 20.0	NR	NR	NR	NR	NR	NR	NR
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Summary of Investigation for 300-FF-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Pesticides Analysis 4, 4'-DDE (ug/kg)	Comments
316-1	South Process Pond	
0.0 - 2.5	17.0 (U) - 18.0 (U)	
2.5 - 5.0	16.0 (U) - 17.0 (U)	
5.0 - 10.0	16.0 (U) - 18.0 (U)	
10.0 - 15.0	16.0 (U) - 17.0 (U)	
15.0 - 20.0	17.0 (U)	
20.0 - 25.0	17.0 (U) - 18.0 (U)	
25.0 - 30.0	16.0 (U) - 18.0 (U)	
30.0 - 35.0	17.0 (U) - 20.0 (U)	
35.0 - 40.0	17.0 (U) - 20.0 (U)	
40.0 - 45.0	17.0 (U) - 20.0 (U)	
Average	0.0	
316-2	North Process Pond	
0.0 - 2.5	17.0 (U) - 34.0 (U)	
2.5 - 5.0	16.0 (U) - 200.0 (U)	
5.0 - 10.0	16.0 (U) - 170.0 (U)	
10.0 - 15.0	16.0 (U) - 18.0 (U)	
15.0 - 20.0	17.0 (U) - 18.0 (U)	
20.0 - 25.0	17.0 (U) - 18.0 (U)	
25.0 - 30.0	18.0 (U) - 19.0 (U)	
30.0 - 35.0	18.0 (U) - 22.0 (U)	
Average	0.0	
316-5	Process Trenches (Data from East Trench Post-ERA)	
0.0 - 2.5	17.0 (U)	
316-5	Process Trenches (Test Pit Data from West Trench)	
0.0 - 2.5	18.0 (U)	
2.5 - 5.0	18.0 (U)	
5.0 - 10.0	17.0 (U)	
10.0 - 15.0	18.0 (U)	
15.0 - 20.0	20.0 (U)	
Average	0.0	

Summary of Investigation for 300-FF-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Volatile Organic Analysis: Carbon Disulfide (ug/kg)	1,2 - Dichloroethene (total) (ug/kg)	Tetrachloro-ethene (ug/kg)	Toluene (ug/kg)	Trichloroethene (ug/kg)	Vinyl Chloride (ug/kg)	Semi-Volatile Organic Analysis: Anthracene (ug/kg)
	Sanitary Sewer System						
Surface Grab Samples	6.0 (U) - 17.0 (U)	6.0 (U) - 17.0 (U)	6.0 (U) - 17.0 (U)	6.0 (U) - 44.0	6.0 (U) - 17.0 (U)	12.0 (U) - 33.0 (U)	800.0 (U) - 2900.0 (U)
Average	0.0	0.0	0.0	22.0	0.0	0.0	0.0
	Ash Pits						
Surface Grab Samples	RA	RA	RA	RA	RA	RA	400.0 (UR) - 500.0 (UR)
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Retired Filter Backwash Pond (Infiltration Basin of South Process Pond)						
	Filter Backwash Pond						
Surface Grab Sample	RA	RA	RA	RA	RA	RA	57.0 (JR) - 400.0 (U)
Average	0.0	0.0	0.0	0.0	0.0	0.0	28.5
618-4	Burial Ground No. 4						
0.0 - 2.5	5.0 (U) - 20.0 (U)	5.0 (U) - 20.0 (U)	5.0 (U) - 300.0 (D)	5.0 (UJ) - 60.0 (J)	5.0 (UJ) - 390.0 (D)	11.0 (UJ) - 40.0 (U)	RA
2.5 - 5.0	5.0 (U)	5.0 (U)	5.0 (U)	6.0 (U)	5.0 (U)	11.0 (U)	RA
5.0 - 10.0	5.0 (U) - 8.0 (UJ)	5.0 (U) - 8.0 (UJ)	5.0 (U) - 140.0 (J)	5.0 (U) - 33.0 (J)	5.0 (U) - 160.0 (J)	11.0 (U) - 17.0 (UJ)	RA
10.0 - 15.0	6.0 (U)	6.0 (U)	6.0 (U)	26.0 (U)	6.0 (U)	11.0 (U)	RA
15.0 - 20.0	5.0 (U)	5.0 (U)	5.0 (U)	5.0 (U)	5.0 (U)	11.0 (U)	RA
20.0 - 25.0	5.0 (U)	5.0 (U)	5.0 (U)	1.0 (U)	5.0 (U)	11.0 (U)	RA
Average	0.0	0.0	29.0	6.3	35.5	0.0	0.0
618-5	Burial Ground No. 5						
0.0 - 2.5	5.0 (U) - 50.0 (UR)	5.0 (U) - 6.0 (UJ)	5.0 (U) - 6.0 (UJ)	5.0 (UJ) - 36.0 (R)	5.0 (U) - 6.0 (UJ)	11.0 (U)	RA
2.5 - 5.0	5.0 (U)	5.0 (U)	5.0 (U)	5.0 (U)	5.0 (U)	10.0 (U)	RA
5.0 - 10.0	10.0 (U)	5.0 (U)	5.0 (U)	3.0 (UJ)	5.0 (U)	10.0 (U)	RA
10.0 - 15.0	6.0 (U)	6.0 (U)	6.0 (U)	3.0 (UJ) - 6.0 (U)	3.0 (UJ) - 6.0 (U)	12.0 (U)	RA
15.0 - 20.0	6.0 (U)	6.0 (U)	14.0	6.0 (U) - 10.0 (U)	28.0 - 29.0	11.0 (U)	RA
20.0 - 25.0	6.0 (U)	6.0 (U)	6.0 (U)	6.0 (U)	6.0 (U)	11.0 (U)	RA
25.0 - 30.0	6.0 (U)	6.0 (U)	2.0 (UJ) - 6.0 (U)	4.0 (UJ) - 5.0 (UJ)	7.0 (U) - 12.0 (U)	12.0 (U)	RA
Average	0.0	0.0	0.0	1.8	5.7	0.0	0.0
618-12	North Process Pond Scraping Disposal Area						
	322 Hazardous Waste Staging Area						

Summary of Investigation for 300-FF-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Aroclor 1248 (ug/kg)	Aroclor 1254 (ug/kg)	Benzo(a) anthracene (ug/kg)	Benzo(a) pyrene (ug/kg)	Benzo(b) fluoranthene (ug/kg)	Benzo(k) fluoranthene (ug/kg)	Benzo(ghi) perylene (ug/kg)
	Semi-Volatile Organic Analysis continued						
	Sanitary Sewer System						
Surface Grab Samples	190.0 (U) - 530.0 (U)	380.0 (U) - 1100.0 (U)	800.0 (U) - 2900.0 (U)	800.0 (U) - 2900.0 (U)	800.0 (U) - 2900.0 (U)	800.0 (U) - 2900.0 (U)	800.0 (U) - 2900.0 (U)
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Ash Pits						
Surface Grab Samples	RA	RA	61.0 (JR) - 440.0 (UR)	400.0 (UR) - 500.0 (UR)	400.0 (UR) - 500.0 (UR)	400.0 (UR) - 500.0 (UR)	400.0 (UR) - 500.0 (UR)
Average	0.0	0.0	30.5	0.0	0.0	0.0	0.0
	Retired Filter Backwash Pond (Infiltration Basin of South Process Pond)						
	Filter Backwash Pond						
Surface Grab Sample	RA	RA	170.0 (JR) - 400.0 (U)	120.0 (JR) - 400.0 (U)	74.0 (JR) - 400.0 (U)	90.0 (JR) - 400.0 (U)	56.0 (JR) - 400.0 (U)
Average	0.0	0.0	85.0	60.0	37.0	45.0	28.0
618-4	Burial Ground No. 4						
0.0 - 2.5	83.0 (U) - 84.0 (U)	2700.0 (DJ)	RA	RA	RA	RA	RA
2.5 - 5.0	87.0 (U)	400.0 (J)	RA	RA	RA	RA	RA
5.0 - 10.0	83.0 (U) - 1300.0 (UJ)	100.0 (J) - 2600.0 (DJ)	RA	RA	RA	RA	RA
10.0 - 15.0	89.0 (U)	490.0 (J)	RA	RA	RA	RA	RA
15.0 - 20.0	83.0 (U)	170.0 (U)	RA	RA	RA	RA	RA
20.0 - 25.0	85.0 (U)	170.0 (U)	RA	RA	RA	RA	RA
Average	0.0	678.0	0.0	0.0	0.0	0.0	0.0
618-5	Burial Ground No. 5						
0.0 - 2.5	81.0 (U) - 91.0 (U)	170.0 (U) - 180.0 (U)	RA	RA	RA	RA	RA
2.5 - 5.0	81.0 (U)	160.0 (U)	RA	RA	RA	RA	RA
5.0 - 10.0	80.0 (U)	98.0 (J)	RA	RA	RA	RA	RA
10.0 - 15.0	92.0 (U)	180.0 (U)	RA	RA	RA	RA	RA
15.0 - 20.0	90.0 (U)	180.0 (U)	RA	RA	RA	RA	RA
20.0 - 25.0	88.0 (U)	180.0 (U)	RA	RA	RA	RA	RA
25.0 - 30.0	93.0 (U)	190.0 (U)	RA	RA	RA	RA	RA
Average	0.0	19.6	0.0	0.0	0.0	0.0	0.0
618-12	North Process Pond Scraping Disposal Area						
	322 Hazardous Waste Staging Area						

Summary of Investigation for 300-FF-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Semi-Volatile Organic Analysis continued						
	bis(2-ethylhexyl)-phthalate (ug/kg)	Butyl-benzylphthalate (ug/kg)	Chrysene (ug/kg)	4-Chloroaniline (ug/kg)	Dibenzo-furan (ug/kg)	Fluoranthene (ug/kg)	Fluorene (ug/kg)
	Sanitary Sewer System						
Surface Grab Samples	560.0 (J) - 33000.0 (D)	230.0 (J) - 2900.0 (U)	800.0 (U) - 2900.0 (U)	800.0 (U) - 6300.0	800.0 (U) - 2900.0 (U)	800.0 (U) - 2900.0 (U)	800.0 (U) - 2900.0 (U)
Average	16780.0	115.0	0.0	3150.0	0.0	0.0	0.0
	Ash Pits						
Surface Grab Samples	68.0 (UR) - 360.0 (UR)	400.0 (UR) - 500.0 (UR)	170.0 (JR) - 500.0 (UR)	400.0 (UR) - 500.0 (UR)	120.0 (JR) - 500.0 (UR)	400.0 (UR) - 500.0 (UR)	400.0 (UR) - 500.0 (UR)
Average	0.0	0.0	85.0	0.0	60.0	0.0	0.0
	Retired Filter Backwash Pond (Infiltration Basin of S Process Pond)						
	Filter Backwash Pond						
Surface Grab Sample	350.0 (U) - 440.0 (JR)	350.0 (U) - 450.0 (UR)	240.0 (JR) - 400.0 (U)	350.0 (U) - 450.0 (UR)	350.0 (U) - 450.0 (UR)	320.0 (JR) - 400.0 (U)	46.0 (JR) - 400.0 (U)
Average	220.0	0.0	120.0	0.0	0.0	160.0	23.0
618-4	Burial Ground No. 4						
0.0 - 2.5	RA	RA	RA	RA	RA	RA	RA
2.5 - 5.0	RA	RA	RA	RA	RA	RA	RA
5.0 - 10.0	RA	RA	RA	RA	RA	RA	RA
10.0 - 15.0	RA	RA	RA	RA	RA	RA	RA
15.0 - 20.0	RA	RA	RA	RA	RA	RA	RA
20.0 - 25.0	RA	RA	RA	RA	RA	RA	RA
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0
618-5	Burial Ground No. 5						
0.0 - 2.5	RA	RA	RA	RA	RA	RA	RA
2.5 - 5.0	RA	RA	RA	RA	RA	RA	RA
5.0 - 10.0	RA	RA	RA	RA	RA	RA	RA
10.0 - 15.0	RA	RA	RA	RA	RA	RA	RA
15.0 - 20.0	RA	RA	RA	RA	RA	RA	RA
20.0 - 25.0	RA	RA	RA	RA	RA	RA	RA
25.0 - 30.0	RA	RA	RA	RA	RA	RA	RA
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0
618-12	North Process Pond Scraping Disposal Area						
	322 Hazardous Waste Staging Area						

Summary of Investigation for 300-FF-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Indeno(1,2,3-cd) pyrene (ug/kg)	2-Methylnaphthalene (ug/kg)	4-Methyphenol (ug/kg)	Naphthalene (ug/kg)	N-nitroso-diphenylamine (ug/kg)	Phenanthrene (ug/kg)	Pyrene (ug/kg)
	Semi-Volatile Organic Analysis continued						
	Sanitary Sewer System						
Surface Grab Samples	800.0 (U) - 2900.0 (U)	800.0 (U) - 2900.0 (U)	1000.0 (J) - 2900.0 (U)	800.0 (U) - 2900.0 (U)	800.0 (U) - 2900.0 (U)	800.0 (U) - 2900.0 (U)	800.0 (U) - 2900.0 (U)
Average	0.0	0.0	500.0	0.0	0.0	0.0	0.0
	Ash Pits						
Surface Grab Samples	400.0 (UR) - 500.0 (UR)	140.0 (JR) - 1200.0 (R)	400.0 (UR) - 500.0 (UR)	81.0 (JR) - 510.0 (R)	400.0 (UR) - 500.0 (UR)	48.0 (JR) - 500.0 (UR)	110.0 (JR) - 440.0 (UR)
Average	0.0	670.0	0.0	295.5	0.0	24.0	55.0
	Retired Filter Backwash Pond (Infiltration Basin of S Process Pond)						
	Filter Backwash Pond						
Surface Grab Sample	50.0 (JR) - 400.0 (U)	46.0 (JR) - 400.0 (U)	350.0 (U) - 450.0 (UR)	350.0 (U) - 450.0 (UR)	350.0 (U) - 450.0 (UR)	350.0 (U) - 560.0 (R)	350.0 (U) - 450.0 (R)
Average	25.0	23.0	0.0	0.0	0.0	280.0	225.0
618-4	Burial Ground No. 4						
0.0 - 2.5	RA	RA	RA	RA	RA	RA	RA
2.5 - 5.0	RA	RA	RA	RA	RA	RA	RA
5.0 - 10.0	RA	RA	RA	RA	RA	RA	RA
10.0 - 15.0	RA	RA	RA	RA	RA	RA	RA
15.0 - 20.0	RA	RA	RA	RA	RA	RA	RA
20.0 - 25.0	RA	RA	RA	RA	RA	RA	RA
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0
618-5	Burial Ground No. 5						
0.0 - 2.5	RA	RA	RA	RA	RA	RA	RA
2.5 - 5.0	RA	RA	RA	RA	RA	RA	RA
5.0 - 10.0	RA	RA	RA	RA	RA	RA	RA
10.0 - 15.0	RA	RA	RA	RA	RA	RA	RA
15.0 - 20.0	RA	RA	RA	RA	RA	RA	RA
20.0 - 25.0	RA	RA	RA	RA	RA	RA	RA
25.0 - 30.0	RA	RA	RA	RA	RA	RA	RA
Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0
618-12	North Process Pond Scraping Disposal Area						
	322 Hazardous Waste Staging Area						

Summary of Investigation for 300-FF-1 Operable Unit - Organic Constituents

Site Identification with depth (ft) of sample collection	Pesticides Analysis 4, 4'-DDE (ug/kg)	Comments
	Sanitary Sewer System	
Surface Grab Samples	38.0 (U) - 81.0 (J)	
Average	40.5	
	Ash Pits	
Surface Grab Samples	RA	
Average	0.0	
	Retired Filter Backwash Pond (Infiltration Basin of S Process Pond)	No LFI Investigation
	Filter Backwash Pond	
Surface Grab Sample	RA	
Average	0.0	
618-4	Burial Ground No. 4	
0.0 - 2.5	17.0 (U) - 250.0 (UJ)	
2.5 - 5.0	17.0 (UJ)	
5.0 - 10.0	17.0 (U) - 260.0 (UJ)	
10.0 - 15.0	18.0 (UJ)	
15.0 - 20.0	17.0 (U)	
20.0 - 25.0	17.0 (U)	
Average	0.0	
618-5	Burial Ground No. 5	
0.0 - 2.5	17.0 (U) - 18.0 (U)	
2.5 - 5.0	16.0 (U)	
5.0 - 10.0	16.0 (U)	
10.0 - 15.0	18.0 (U)	
15.0 - 20.0	18.0 (U)	
20.0 - 25.0	18.0 (U)	
25.0 - 30.0	19.0 (U)	
Average	0.0	
618-12	North Process Pond Scraping Disposal Area	No LFI Investigation
	322 Hazardous Waste Staging Area	No LFI Investigation

APPENDIX B-3

SUMMARY CONSTITUENT TABLES FOR RADIONUCLIDE CONSTITUENTS

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Summary of Investigation for 100-BC-1 Operable Unit - Radionuclide Constituents

Site Identification with depth (ft) of sample collection	Gross Alpha (pCi/g)	Gross Beta (pCi/g)	Americium 241 (pCi/g)	Carbon 14 (pCi/g)	Cesium 134 (pCi/g)	Cesium 137 (pCi/g)	Cobalt 60 (pCi/g)	Europium 152 (pCi/g)
116-B-1	**Liquid Waste Disposal Trench**							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	0.0 (N) - 8.89 (R)	76.7 (R) - 201.0	0.13 (R) - 0.482 (R)	3.77 (J) - 6.18 (J)	0.453 (UJ) - 0.686 (U)	22.99 (J) - 43.85	1.589 (J) - 4.167	59.15 (J) - 121.9
17.5 - 20.0	8.89 (R)	76.7 (R)	0.13 (R)	6.18 (J)	0.453 (UJ)	22.99 (J)	1.589 (J)	59.15 (J)
20.0 - 22.5	5.18 (R)	54.3	0.05	3.76 (J)	0.222 (U)	10.36	0.389	17.56
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	1.90 (R)	14.9 (U)	0.002	1.89 (J)	0.177 (U)	1.394	0.158 (U)	4.114
Average	5.1	67.5	0.1	4.2	0.0	17.0	1.2	42.8
116-B-2	**Fuel Storage Basin Trench**							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	2.26 (R)	123.0	0.023 (R)	3.03 (J)	0.206 (U)	91.32	0.135	10.36
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	2.93 (R)	8.51 (U)	0.336	3.95 (J)	0.106 (U)	0.092 (U)	0.111 (U)	NR
20.0 - 22.5	0.0 (NR)	7.32 (UJ)	0.0 (NJ)	0.0 (NUJ)	0.103 (U)	0.110 (U)	0.108 (U)	NR
Average	1.7	41.0	0.1	2.3	0.0	30.4	0.0	10.4
116-B-3	**Pluto Crib**							
0.0 - 10.0	0.0 (NR)	207.0 (R)	0.083	4.10 (UJ)	0.102 (U)	75.58	0.085 (U)	NR
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	2.76 (R) - 5.0 (R)	26.3 (RU) - 54.0 (RU)	0.008 (RU) - 0.024	0.6 (RU) - 3.58 (J)	0.06 (RU) - 0.14 (UJ)	2.78 (R) - 4.71 (J)	0.04 (RU) - 0.097 (UJ)	0.1 (RU)
15.0 - 17.5	0.0 (NR)	7.54 (RU)	0.020	1.10 (UJ)	0.096 (UJ)	0.253 (J)	0.084 (UJ)	NR
Average	0.6	138.0	0.1	0.3	0.0	51.1	0.0	0.0
116-B-5	**Crib**							
0.0 - 10.0	3.060 (R)	3.24 (R)	0.006	3.36 (UJ)	0.119 (UJ)	0.132 (J)	0.134 (J)	1.166 (J)
10.0 - 12.5	3.610 (R)	6.45 (R)	0.002	3.77 (UJ)	0.128 (UJ)	0.202 (UJ)	0.260 (J)	1.527 (J)
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	6.790 (R)	13.60 (R)	0.002	2.01 (UJ)	0.113 (UJ)	0.104 (UJ)	0.184 (J)	NR
Average	3.8	5.5	0.005	0.0	0.0	0.176	0.163	1.2

Summary of Investigation for 100-BC-1 Operable Unit - Radionuclide Constituents

Site Identification with depth (ft) of sample collection	Europium 154 (pCi/g)	Europium 155 (pCi/g)	Plutonium 238 (pCi/g)	Plutonium 239/240 (pCi/g)	Potassium 40 (pCi/g)	Radium 226 (pCi/g)	Strontium 90 (pCi/g)
116-B-1	Liquid Waste Disposal Trench						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	4.749 (J) - 9.9	NS	0.088 (R) - 0.108 (R)	0.92 (R) - 3.60 (R)	15.59 (U)	1.043 (U)	6.4 - 13.2
17.5 - 20.0	4.749 (J)	NS	0.088 (R)	0.92 (R)	13.72 (UJ)	0.802 (UJ)	6.38
20.0 - 22.5	1.195	NS	0.0 (N)	0.269	10.19 (U)	0.495 (U)	5.08
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	NR	NS	0.0 (N)	0.067 (U)	10.18 (U)	0.322 (U)	1.54
Average	4.4	NS	0.05	0.9	0.0	0.0	5.7
116-B-2	Fuel Storage Basin Trench						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	0.564	NR	0.033 (R)	5.71 (R)	6.785 (U)	0.540 (U)	64.1
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	NR	NR	0.0 (U)	0.05 (U)	8.500 (U)	0.423 (U)	0.988
20.0 - 22.5	NR	NR	0.053 (J)	0.0 (NUJ)	6.822 (U)	0.326 (U)	0.400 (J)
Average	0.6	NS	0.01	1.9	0.0	0.0	21.8
116-B-3	Pluto Crib						
0.0 - 10.0	NR	NR	0.035 (J)	0.791 (J)	9.181 (U)	0.720 (U)	39.2 (J)
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	0.1 (RU)	0.2 (RU)	0.0 (NU)	0.039 (RU) - 0.075 (U)	8.063 (UJ) - 15.3 (RU)	0.313 (UJ) - 0.9 (RU)	4.9 (R) - 5.57 (UJ)
15.0 - 17.5	NR	NR	0.0 (NU)	0.006 (U)	7.914 (UJ)	0.271 (UJ)	0.587 (J)
Average	0.0	0.0	0.02	0.5	0.0	0.0	26.6
116-B-5	Crib						
0.0 - 10.0	NR	NR	0.0 (NUJ)	0.018 (U)	10.830 (UJ)	0.354 (UJ)	0.00 (J)
10.0 - 12.5	NR	NR	0.0 (NUJ)	0.0 (NU)	8.672 (UJ)	0.449 (UJ)	0.0 (NJ)
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NR	NR	0.004 (UJ)	0.016 (U)	8.709 (UJ)	0.227 (UJ)	0.15 (J)
Average	NR	NR	0.0	0.0	0.0	0.0	0.03

Summary of Investigation for 100-BC-1 Operable Unit - Radionuclide Constituents

Site Identification with depth (ft) of sample collection	Thorium 228 (pCi/g)	Uranium 233/234 (pCi/g)	Uranium 235 (pCi/g)	Uranium 238 (pCi/g)	Comments
116-B-1	**Liquid Waste Disposal Trench**				
0.0 - 10.0	NS	NS	NS	NS	
10.0 - 12.5	NS	NS	NS	NS	
12.5 - 15.0	NS	NS	NS	NS	
15.0 - 17.5	0.869 (U)	0.436 (RU)	0.047 (RU)	0.461 (RU)	
17.5 - 20.0	0.699 (UJ)	0.44 (RU)	0.0 (RU)	0.493 (RU)	
20.0 - 22.5	0.478 (U)	0.565 (RU)	0.057 (RU)	0.424 (RU)	
22.5 - 25.0	NS	NS	NS	NS	
25.0 - 27.5	0.608 (U)	0.346 (RU)	0.006 (RU)	0.327 (RU)	
Average	0.0	0.0	0.0	0.0	
116-B-2	**Fuel Storage Basin Trench**				
0.0 - 10.0	NS	NS	NS	NS	
10.0 - 12.5	0.595 (U)	0.593 (RU)	0.0 (RU)	0.480 (RU)	
12.5 - 15.0	NS	NS	NS	NS	
15.0 - 17.5	NS	NS	NS	NS	
17.5 - 20.0	0.615 (U)	0.633 (U)	0.018 (RU)	0.564 (U)	
20.0 - 22.5	0.535 (U)	0.499 (UJ)	0.022 (RU)	0.507 (UJ)	
Average	0.0	0.0	0.0	0.0	
116-B-3	Pluto Crib				
0.0 - 10.0	0.713 (U)	0.206 (U)	0.013 (RU)	0.188 (U)	
10.0 - 12.5	NS	NS	NS	NS	
12.5 - 15.0	0.579 (UJ) - 0.723 (R)	0.476 (U)	0.0 (RU) - 0.007 (RU)	0.24 (RU) - 0.439 (U)	
15.0 - 17.5	0.594 (UJ)	0.530 (RU)	0.008 (RU)	0.536 (RU)	
Average	0.1	0.0	0.0	0.0	
116-B-5	Crib				
0.0 - 10.0	0.606 (UJ)	0.573 (RU)	0.029 (RU)	0.521 (RU)	
10.0 - 12.5	0.562 (UJ)	0.917 (UJ)	0.054 (RU)	0.842 (UJ)	
12.5 - 15.0	NS	NS	NS	NS	
15.0 - 17.5	0.486 (UJ)	0.568 (RU)	0.026 (RU)	0.636 (RU)	
Average	0.0	0.0	0.0	0.0	

Summary of Investigation for 100-BC-1 Operable Unit - Radionuclide Constituents

Site Identification with depth (ft) of sample collection	Gross Alpha (pCi/g)	Gross Beta (pCi/g)	Americium 241 (pCi/g)	Carbon 14 (pCi/g)	Cesium 134 (pCi/g)	Cesium 137 (pCi/g)	Cobalt 60 (pCi/g)	Europium 152 (pCi/g)
116-C-5	Retention Basin - Test Pit (in area contaminated by leakage from west basin)							
0.0 - 10.0	7.2 (R) - 10.0 (R)	18.0 - 32.0	0.11 (U) - 0.13	0.0 (N) - 7.7(UJ)	NR	0.09 - 9.8	3.2	13.0
10.0 - 12.5	3.9 (R)	16.0	0.0 (N)	0.0 (N)	NR	0.091	NR	0.078
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	5.7 (R)	16.0	0.007 (U)	0.50 (UJ)	NR	NR	NR	NR
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	3.9 (R) - 15.0 (R)	17.0 - 36.0 (R)	0.005 (U) - 0.004 (R)	0.0 (N)	NR	NR	NR	NR
Average	7.6	22.6	0.04	0.0	NR	4.0	3.2	10.4
116-C-5	Retention Basin - sludge samples from inside basins							
East Basin	52.0 (R) - 110.0 (R)	1300.0 (J) - 3700.0	7.7 (R) - 34.0	130.0 (B) - 640.0 (B)	2.2 (U) - 3.2 (U)	200.0 - 800.0	130.0 - 310.0	820.0 - 1400.0
West Basin	14.0 (RU) - 22.0 (R)	83.0 (J) - 2400.00	7.5 (R) - 13.0 (R)	6.8 (U) - 26.00 (BJ)	0.67 (U) - 2.5 (U)	5.1 - 790.00	10.0 - 180.00	81.0 - 1400.00
Average	46.0	1870.8	15.6	199.0	0.0	443.8	157.5	925.3
116-C-1	Liquid Waste Disposal Trench							
116-B-11	Retention Basin							
116-B-7	Outfall Structure							
132-6	Outfall Structure							
132-C-2	Outfall Structure							
116-B-13/14	Sludge Burial Trenches							
116-B-6A	Crib							
116-B-6B	Crib							
116-B-4	Dummy Decontamination French Drain							
116-B-9	French Drain							
116-B-10	Dry Well							
116-B-12	Crib							
118-B-5	Ball 3X Burial Ground							
118-B-7	Solid Waste Burial Ground							
118-B-4/5	Filter Building, Gas Recirculation, Building, and Tunnels							
118-B-10	Solid Waste Burial Ground							
118-B-10	Burn Pit							
128-B-32	Burn Pit							
125-B-2	Clearwells							

Summary of Investigation for 100-BC-1 Operable Unit - Radionuclide Constituents

Site Identification with depth (ft) of sample collection	Europium 154 (pCi/g)	Europium 155 (pCi/g)	Plutonium 238 (pCi/g)	Plutonium 239/240 (pCi/g)	Potassium 40 (pCi/g)	Radium 226 (pCi/g)	Strontium 90 (pCi/g)
116-C-5	Retention Basin						
0.0 - 10.0	2.0	NR	0.0 (NUJ)	0.006 (UJ) - 0.21 (J)	11.0 (U) - 13.0 (U)	0.52 (U) - 0.68	0.25 (U) - 1.30 (J)
10.0 - 12.5	NR	NR	0.004 (UJ)	0.004 (UJ)	10.0 (U)	0.33 (U)	0.11 (U)
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NR	NR	0.000 (UJ)	0.003 (UJ)	8.9 (U)	0.43 (U)	0.0 (NU)
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	NR	NR	0.000 (UJ)	0.008 (UJ)	7.9 (U)	0.32 (U) - 1.02 (R)	0.012 (R) - 0.18 (U)
Average	2.0	NR	0.0	0.1	0.0	0.3	0.4
116-C-5	Retention Basin						
East Basin	150.0 - 410.0	11.0 - 41.0	0.9 (R) - 9.4 (R)	22.0 (R) - 190.0 (R)	8.80 (U) - 12.0 (U)	2.9 (U) - 4.6 (U)	110.0 - 770.0
West Basin	20.0 - 250.00	1.9 (J) - 18.00	0.041 (R) - 1.20 (R)	0.860 (R) - 36.00 (R)	8.30 (U) - 13.0 (U)	0.84 - 3.7 (U)	7.80 (J) - 180.00
Average	207.5	18.0	2.9	62.2	0.0	0.2	267.0
116-C-1	Liquid Waste Disposal Trench						
116-B-11	Retention Basin						
116-B-7	Outfall Structure						
132-6	Outfall Structure						
132-C-2	Outfall Structure						
116-B-13/14	Sludge Burial Trenches						
116-B-6A	Crib						
116-B-6B	Crib						
116-B-4	Dummy Decontamination French Drain						
116-B-9	French Drain						
116-B-10	Dry Well						
116-B-12	Crib						
118-B-5	Ball 3X Burial Ground						
118-B-7	Solid Waste Burial Ground						
118-B-4/5	Filter Building, Gas Recirculation, Building, and Tunnels						
138-B-10	Solid Waste Burial Ground						
118-B-10	Burn Pit						
128-B-32	Burn Pit						
125-B-2	Clearwells						

Summary of Investigation for 100-BC-1 Operable Unit - Radionuclide Constituents

Site Identification with depth (ft) of sample collection	Thorium 228 (pCi/g)	Uranium 233/234 (pCi/g)	Uranium 235 (pCi/g)	Uranium 238 (pCi/g)	Comments
116-C-5	Retention Basin				
0.0 - 10.0	0.82 (U) - 0.91 (U)	0.72 (U) - 1.10 (U)	0.0 (NU)	0.660 (UJ) - 0.920 (UJ)	
10.0 - 12.5	NR	0.91 (U)	0.069 (UJ)	0.810 (UJ)	
12.5 - 15.0	NS	NS	NS	NS	
15.0 - 17.5	0.70 (U)	0.78	0.095 (UJ)	0.850 (UJ)	
17.5 - 20.0	NS	NS	NS	NS	
20.0 - 22.5	0.61 (U) - 4.40 (R)	0.84	0.0 (UJ) - 0.009 (R)	0.580 (UJ)	
Average	0.3	0.2	0.0	0.0	
116-C-5	Retention Basin				
East Basin	2.5 (U) - 3.7 (U)	0.690 (RU) - 1.2 (R)	0.023 (RU) - 0.081 (R)	0.072 (RU) - 1.1 (R)	
West Basin	0.76 (U) - 3.0 (U)	0.67 (RU) - 1.40 (R)	0.031 (RU) - 0.070 (RU)	0.70 (RU) - 1.30 (R)	
Average	0.0	0.7	0.020	0.6	
116-C-1	Liquid Waste Disposal Trench				No LFI Investigation
116-B-11	Retention Basin				No LFI Investigation
116-B-7	Outfall Structure				No LFI Investigation
132-6	Outfall Structure				No LFI Investigation
132-C-2	Outfall Structure				No LFI Investigation
116-B-13/14	Sludge Burial Trenches				No LFI Investigation
116-B-6A	Crib				No LFI Investigation
116-B-6B	Crib				No LFI Investigation
116-B-4	Dummy Decontamination French Drain				No LFI Investigation
116-B-9	French Drain				No LFI Investigation
116-B-10	Dry Well				No LFI Investigation
116-B-12	Crib				No LFI Investigation
118-B-5	Ball 3X Burial Ground				No LFI Investigation
118-B-7	Solid Waste Burial Ground				No LFI Investigation
118-B-4/5	Filter Building, Gas Recirculation, Building, and Tunnels				No LFI Investigation
118-B-10	Solid Waste Burial Ground				No LFI Investigation
118-B-10	Burn Pit				No LFI Investigation
128-B-32	Burn Pit				No LFI Investigation
125-B-2	Clearwells				No LFI Investigation

Summary of Investigation for 100-DR-1 Operable Unit - Radionuclide Constituents

Site Identification with depth (ft) of sample collection	Gross Alpha (pCi/g)	Gross Beta (pCi/g)	Americium 241 (pCi/g)	Beryllium 7 (pCi/g)	Carbon 14 (pCi/g)	Cesium 137 (pCi/g)	Cobalt 58 (pCi/g)	Cobalt 60 (pCi/g)
116-D-1A	Trench							
0.0 - 10.0	5.7 (R) - 6.3 (R)	81.0 (R) - 82.0 (R)	0.12 (R) - 0.17 (R)	6.0 (UJ) - 50.0 (UJ)	0.4 (R)	0.079 (J) - 25.7 (J)	0.2 (UJ) - 1.0 (UJ)	0.02 (UJ) - 1.02 (UJ)
10.0 - 15.0	2.6 (R) - 5.7 (R)	63.0 (R) - 82.0 (R)	0.015 (R) - 0.12 (R)	6.0 (UJ) - 7.0 (R)	0.0 (NR) - 0.4 (R)	0.079 (J) - 19.9 (R)	0.2 (R)	0.02 (UJ) - 0.06 (R)
15.0 - 20.0	23.0 (R)	510.0 (R)	1.0 (R)	80.0 (UJ)	0.45 (R)	148.0 (J)	4.44 (J)	10.9 (J)
20.0 - 25.0	11.0 (R)	390.0 (R)	1.1 (R)	60.0 (UJ)	0.48 (R)	153.0 (UJ)	1.0 (UJ)	1.41 (J)
25.0 - 30.0	11.0 (R)	370.0 (R) - 390.0 (R)	0.97 (R) - 1.1 (R)	153.0 (UJ) - 90.0 (J)	0.40 (R) - 0.48 (R)	153.0 (UJ) - 305.0 (J)	1.0 (UJ) - 2.34 (J)	1.41 (J) - 1.59 (J)
30.0 - 35.0	8.1 (R) - 15.0 (R)	35.0 (R) - 280.0 (R)	1.3 (R) - 1.4 (R)	20.0 (UJ)	0.14 (R) - 0.15 (R)	189.0 (J) - 190.0 (J)	0.6 (UJ) - 0.7 (UJ)	1.33 (J) - 1.54 (J)
35.0 - 40.0	NS	NS	NS	NS	NS	NS	NS	NS
40.0 - 45.0	11.0 (R) - 14.0 (R)	170.0 (R) - 210.0 (R)	0.77 (R) - 1.3 (R)	6.0 (UJ) - 20.0 (UJ)	0.029 (R) - 0.36 (R)	68.1 (J) - 94.6 (J)	0.3 (UJ) - 1.0 (UJ)	2.08 (J) - 5.57 (J)
45.0 - 50.0	11.0 (R)	210.0 (R)	1.3 (R)	20.0 (UJ)	0.029 (R)	94.6 (J)	1.0 (UJ)	5.57 (J)
Average	10.7	230.3	0.8	5.4	0.3	78.0	0.6	2.7
116-D-1B	Trench							
0.0 - 10.0	3.0 (R) - 6.3 (R)	30.0 (R) - 40.0 (R)	NR	NR	0.5 (UJ)	NR	NR	NR
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	11.0 (R)	760.0 (R)	1.3 (R)	20.0 (UJ)	0.023 (R)	322.0 (J)	1.7 (J)	16.3 (J)
15.0 - 17.5	11.0 (R)	490.0 (R) - 760.0 (R)	0.89 (R) - 1.3 (R)	0.1 (UJ) - 20.0 (UJ)	0.023 (R) - 0.44 (R)	198.0 (J) - 322.0 (J)	1.11 (J) - 1.7 (J)	10.5 (J) - 16.3 (J)
17.5 - 20.0	11.0 (R)	490.0 (R)	0.89 (R)	0.1 (UJ)	0.44 (R)	198.0 (J)	1.11 (J)	10.5 (J)
20.0 - 22.5	NS	NS	NS	NS	NS	NS	NS	NS
22.5 - 25.0	4.2 (R)	63.0 (R)	0.071 (R)	2.0 (UJ)	0.35 (R)	1.51 (J)	0.1 (UJ)	0.17 (J)
25.0 - 27.5	4.2 (R)	63.0 (R)	0.071 (R)	2.0 (UJ)	0.35 (R)	1.51 (J)	0.1 (UJ)	0.17 (J)
27.5 - 30.0	0.07	23.1 - 39.0	NR	NR	NR	0.419 - 0.621	NR	0.0963 - 0.1511
30.0 - 32.5	0.07	23.1 - 39.0	NR	NR	0.0 (N) - 5.2	0.419 - 0.621	NR	0.0963 - 0.1511
32.5 - 35.0	5.9	50.0	NR	NR	NR	0.0535	NR	NR
35.0 - 37.5	5.9	50.0	NR	NR	NR	0.0535	NR	NR
Average	5.5	177.2	0.7	6.8	0.4	87.1	0.8	5.8
116-D-6	French Drain							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	8.4 (R)	29.0 (R)	0.0053 (R)	2.0 (UJ)	0.0036 (R)	0.04 (UJ)	0.1 (UJ)	0.3 (UJ)
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	7.8 (R)	23.0 (R)	0.0048 (R)	2.0 (UJ)	0.23 (R)	0.03 (UJ)	0.1 (UJ)	0.3 (UJ)
Average	8.1	26.0	0.0	0.0	0.1	0.0	0.0	0.0

Summary of Investigation for 100-DR-1 Operable Unit - Radionuclide Constituents

Site Identification with depth (ft) of sample collection	Europium 152 (pCi/g)	Europium 154 (pCi/g)	Plutonium 239/240 (pCi/g)	Potassium 40 (pCi/g)	Radium 226 (pCi/g)	Sodium 22 (pCi/g)	Strontium 90 (pCi/g)	Technetium 99 (pCi/g)
116-D-1A	Trench							
0.0 - 10.0	0.05 (UJ) - 9.17 (J)	0.07 (UJ) - 0.869 (J)	0.46 (R) - 0.47 (R)	10.4 (J) - 11.1 (J)	0.803 (J) - 2.0 (UJ)	0.338 (J)	4.2 (J) - 5.0 (J)	0.90 (U) - 1.0 (UJ)
10.0 - 15.0	0.05 (UJ) - 1.26 (R)	0.07 (UJ) - 0.2 (R)	0.14 (R) - 0.47 (R)	11.1 (J) - 13.4 (R)	0.803 (J) - 1.0 (R)	NS	3.6 (R) - 4.2 (J)	0.08 (R) - 1.0 (UJ)
15.0 - 20.0	112.0 (J)	10.0 (J)	6.8 (R)	6.4 (J)	4.0 (UJ)	4.72 (J)	0.11	0.099 (R)
20.0 - 25.0	48.6 (J)	5.97 (J)	7.1 (J)	7.73 (J)	42.8 (J)	2.39 (J)	0.18	0.0 (U)
25.0 - 30.0	45.80 (J) - 48.6 (J)	5.97 (J) - 62.5 (J)	0.008 (R) - 7.1 (J)	7.73 (J) - 8.79 (J)	37.40 (J) - 42.8 (J)	2.21 (J) - 2.39 (J)	0.18 - 0.45	0.0 (U) - 0.27 (R)
30.0 - 35.0	37.2 (J) - 38.1 (J)	4.83 (J) - 6.17 (J)	7.5 (J) - 8.3 (J)	7.85 (J) - 8.27 (J)	5.0 (UJ)	1.81 (J) - 1.84 (J)	0.12	0.4 (U) - 0.51
35.0 - 40.0	NS	NS	NS	NS	NS	NS	NS	NS
40.0 - 45.0	34.8 (J) - 59.0 (J)	4.77 (J) - 7.25 (J)	3.9 (J) - 5.7 (J)	10.5 (J) - 12.0 (J)	2.0 (UJ) - 6.0 (UJ)	1.71 (J) - 2.6 (J)	1.8 - 2.2	0.0 (U) - 0.54 (U)
45.0 - 50.0	59.0 (J)	7.25 (J)	5.7 (J)	12.0 (J)	6.0 (UJ)	2.6 (J)	1.8	0.54 (U)
Average	40.1	7.8	4.1	9.7	9.4	1.9	2.0	0.1
116-D-1B	Trench							
0.0 - 10.0	NR	NR	NR	NR	NR	NS	1.3 - 1.6 (J)	0.7 (U)
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	147.0 (J)	15.9 (J)	5.3 (J)	8.99 (J)	8.0 (UJ)	5.7 (J)	32.0	0.38 (U)
15.0 - 17.5	9.6 (J) - 147.0 (J)	15.9 (J) - 98.2 (J)	4.1 (J) - 5.3 (J)	8.99 (J) - 14.1 (J)	4.0 (UJ) - 8.0 (UJ)	3.43 (J) - 5.7 (J)	25.0 - 32.0	0.4 (U) - 0.49 (R)
17.5 - 20.0	9.6 (J)	98.2 (J)	4.1 (J)	14.1 (J)	4.0 (UJ)	3.43 (J)	25.0	0.49 (R)
20.0 - 22.5	NS	NS	NS	NS	NS	NS	NS	NS
22.5 - 25.0	0.396 (J)	0.423 (J)	0.4 (J)	8.86 (J)	0.7 (UJ)	NS	8.4	0.3 (U)
25.0 - 27.5	0.396 (J)	0.423 (J)	0.4 (J)	8.86 (J)	0.7 (UJ)	NS	8.4	0.3 (U)
27.5 - 30.0	2.896 - 3.24	0.323	NR	8.364 - 8.84	NR	0.125	6.1 - 8.4	0.12
30.0 - 32.5	2.896 - 3.24	0.323	NR	8.364 - 8.84	NR	0.125	6.1 - 8.4	0.12
32.5 - 35.0	1.4	NR	NR	8.33	NR	0.112	7.4	NR
35.0 - 37.5	1.4	NR	NR	8.33	NR	0.112	7.4	NR
Average	27.2	24.7	2.8	9.6	0.0	2.0	10.6	0.1
116-D-6	French Drain							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	0.1 (UJ)	0.1 (UJ)	0.0005 (R)	11.0 (J)	0.897 (J)	NS	0.03 (U)	0.13 (U)
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	0.06 (UJ)	0.09 (UJ)	0.00072 (R)	11.1 (J)	0.98 (J)	NS	0.07 (U)	0.14 (U)
Average	0.0	0.0	0.0	11.1	0.9	NS	0.0	0.0

Summary of Investigation for 100-DR-1 Operable Unit - Radionuclide Constituents

Site Identification with depth (ft) of sample collection	Thorium 228 (pCi/g)	Thorium 232 (pCi/g)	Uranium 233/234 (pCi/g)	Uranium 235 (pCi/g)	Uranium 238 (pCi/g)	Comments
116-D-1A	Trench					
0.0 - 10.0	0.562 (J) - 0.636 (J)	NS	NS	0.0044 (R) - 0.0071 (R)	0.11 (R) - 0.13 (R)	
10.0 - 15.0	0.63 (R) - 0.636 (J)	NS	NS	0.0054 (R)	0.13 (R) - 0.18 (R)	
15.0 - 20.0	0.5 (UJ)	NS	NS	0.0067 (R)	0.2800 (R)	
20.0 - 25.0	0.4 (UJ)	NS	NS	0.012 (R)	0.04 (R)	
25.0 - 30.0	0.4 (UJ) - 0.5 (J)	NS	NS	0.0083 (R) - 0.012 (R)	0.0083 (R) - 0.040 (R)	
30.0 - 35.0	0.5 (UJ)	NS	NS	0.0026 (UJ) - 0.0073 (J)	0.083 (J) - 0.11 (J)	
35.0 - 40.0	NS	NS	NS	NS	NS	
40.0 - 45.0	0.2 (UJ) - 0.6 (UJ)	NS	NS	0.0086 (J) - 0.0091 (J)	0.10 (J) - 0.12 (J)	
45.0 - 50.0	0.6 (UJ)	NS	NS	0.0086 (J)	0.12 (J)	
Average	0.2	NS	NS	0.0	0.1	
116-D-1B	Trench					
0.0 - 10.0	NR	NR	NS	NR	NR	
10.0 - 12.5	NS	NR	NS	NS	NS	
12.5 - 15.0	0.7 (UJ)	NR	NS	0.0067 (J)	0.25 (J)	
15.0 - 17.5	0.4 (UJ) - 0.7 (UJ)	NR	NS	0.0013 (UJ) - 0.0067 (J)	0.22 (J) - 0.25 (J)	
17.5 - 20.0	0.4 (UJ)	NR	NS	0.0013 (UJ)	0.22 (J)	
20.0 - 22.5	NS	NR	NS	NS	NS	
22.5 - 25.0	0.825 (J)	NR	NS	0.005 (UJ)	0.12 (J)	
25.0 - 27.5	0.825 (J)	NR	NS	0.005 (UJ)	0.12 (J)	
27.5 - 30.0	0.472 - 0.5354	0.6082	NS	NR	NR	
30.0 - 32.5	0.472 - 0.5354	0.6082	NS	NR	NR	
32.5 - 35.0	0.51	NR	NS	NR	NR	
35.0- 37.5	0.51	NR	NS	NR	NR	
Average	0.4	0.6	NS	0.0	0.2	
116-D-6	French Drain					
0.0 - 10.0	NS	NS	NS	NS	NS	
10.0 - 12.5	NS	NS	NS	NS	NS	
12.5 - 15.0	NS	NS	NS	NS	NS	
15.0 - 17.5	0.69 (J)	NS	NS	0.0066 (R)	0.13 (R)	
17.5 - 20.0	NS	NS	NS	NS	NS	
20.0 - 22.5	0.755 (J)	NS	NS	0.0032 (R)	0.091 (R)	
Average	0.7	NS	NS	0.0	0.1	

Summary of Investigation for 100-DR-1 Operable Unit - Radionuclide Constituents

Site Identification with depth (ft) of sample collection	Gross Alpha (pCi/g)	Gross Beta (pCi/g)	Americium 241 (pCi/g)	Beryllium 7 (pCi/g)	Carbon 14 (pCi/g)	Cesium 137 (pCi/g)	Cobalt 58 (pCi/g)	Cobalt 60 (pCi/g)
116-D-7	Retention Basin							
0.0 - 10.0	5.9 (UJ)	37.0 (J)	0.0028 (R)	1.0 (UJ)	0.43 (R)	9.55 (J)	0.04 (UJ)	0.02 (UJ)
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	NS	NS	NS	NS	NS	NS	NS	NS
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	NS	NS	NS	NS	NS	NS	NS	NS
27.5 - 30.0	5.3 (J)	2.9 (J)	0.012 (R)	0.5 (UJ)	0.082 (U)	0.02 (UJ)	0.04 (UJ)	0.03 (UJ)
30.0 - 32.5	5.3 (J)	2.9 (J)	0.012 (R)	0.5 (UJ)	0.082 (U)	0.02 (UJ)	0.04 (UJ)	0.03 (UJ)
32.5 - 35.0	6.4 (J)	38.0 (J)	0.0032 (R)	0.5 (UJ)	0.36 (U)	0.01 (UJ)	0.03 (UJ)	0.02 (UJ)
35.0 - 37.5	6.4 (J)	38.0 (J)	0.0032 (R)	0.5 (UJ)	0.36 (U)	0.01 (UJ)	0.03 (UJ)	0.02 (UJ)
Average	2.9	28.7	0.0	0.0	0.2	4.8	0.0	0.0
116-DR-9	Process Effluent Retention Basin							
0.0 - 5.0	1.6 (R) - 7.0 (R)	18.0 (R) - 27.0 (R)	0.01 (R)	NR	0.3 (R) - 0.41 (R)	1.05	NR	0.255
5.0 - 10.0	2.4 - 2.6 (UJ)	28.0 (R) - 31.0 (J)	0.011 (R) - 0.015 (R)	0.3 (UJ) - 2.0 (UJ)	0.021 (R) - 0.3 (R)	0.02 (UJ) - 1.98	0.03 (UJ) - 0.1 (UJ)	0.02 (UJ) - 0.275
10.0 - 12.5	2.4 - 3.4 (R)	28.0 (R) - 31.0 (J)	0.011 (R) - 0.015 (R)	0.3 (UJ) - 2.0 (UJ)	0.021 (R) - 0.3 (R)	0.02 (UJ) - 1.98	0.03 (UJ) - 0.1 (UJ)	0.02 (UJ) - 0.275
12.5 - 15.0	6.4 (J)	30.0 (J)	0.0086 (R)	0.4 (UJ)	0.22 (R)	0.0487 (J)	0.03 (UJ)	0.02 (UJ)
15.0 - 17.5	6.4 (J)	30.0 (J)	0.0086 (R)	0.4 (UJ)	0.22 (R)	0.0487 (J)	0.03 (UJ)	0.02 (UJ)
17.5 - 20.0	1.2 (UJ)	33.0 (J)	0.013 (R)	0.4 (UJ)	0.0 (N)	0.02 (UJ)	0.04 (UJ)	0.03 (UJ)
20.0 - 22.5	1.2 (UJ)	33.0 (J)	0.013 (R)	0.4 (UJ)	0.0 (N)	0.02 (UJ)	0.04 (UJ)	0.03 (UJ)
22.5 - 25.0	1.0 - 4.0	30.0 - 37.0	NR	NR	NR	NR	NR	NR
25.0 - 27.5	1.0 - 4.0	30.0 - 37.0	NR	NR	NR	NR	NR	NR
27.5 - 30.0	11.0 (R)	35.0 (R)	0.0006 (R)	NR	NR	NR	NR	NR
30.0 - 32.5	8.4 (R) - 11.0 (R)	24.0	0.0013 (R)	0.3 (UJ)	0.17 (R) - 0.34 (R)	0.236 (J)	0.03 (UJ)	0.02 (UJ)
32.5 - 35.0	4.95 (R) - 9.4 (R)	28.0 (R) - 38.0 (R)	0.0007 (R) - 0.0092 (R)	0.4 (UJ) - 1.0 (UJ)	0.170 (R) - 25.06	0.03 (UJ)	0.05 (UJ) - 0.08 (UJ)	0.03 (J) - 0.1522 (U)
35.0 - 37.5	4.95 (R) - 9.4 (R)	28.0 (R) - 38.0 (R)	0.0007 (R) - 0.0092 (R)	0.4 (UJ) - 1.0 (UJ)	0.170 (R) - 25.06	0.03 (UJ)	0.05 (UJ) - 0.08 (UJ)	0.03 (J) - 0.1522 (U)
Average	4.5	30.1	0.0	0.0	2.3	0.5	0.0	0.1

Summary of Investigation for 100-DR-1 Operable Unit - Radionuclide Constituents

Site Identification with depth (ft) of sample collection	Europium 152 (pCi/g)	Europium 154 (pCi/g)	Plutonium 239/240 (pCi/g)	Potassium 40 (pCi/g)	Radium 226 (pCi/g)	Sodium 22 (pCi/g)	Strontium 90 (pCi/g)	Technetium 99 (pCi/g)
116-D-7	Retention Basin							
0.0- 10.0	NS	NS	0.016 (R)	8.71 (J)	0.8 (UJ)	NS	1.9 (J)	0.24 (UJ)
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	NS	NS	NS	NS	NS	NS	NS	NS
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	NS	NS	NS	NS	NS	NS	NS	NS
27.5 - 30.0	NS	NS	0.0043 (R)	12.5 (J)	0.585 (J)	NS	0.44 (UJ)	0.22 (U)
30.0 - 32.5	NS	NS	0.0043 (R)	12.5 (J)	0.585 (J)	NS	0.44 (UJ)	0.22 (U)
32.5 - 35.0	NS	NS	0.0056 (R)	15.8 (J)	0.749 (J)	NS	0.57	0.43 (U)
35.0 - 37.5	NS	NS	0.0056 (R)	15.8 (J)	0.749 (J)	NS	0.57	0.43 (U)
Average	NS	NS	0.0	11.4	0.3	NS	1.1	0.0
116-DR-9	Process Effluent Retention Basin							
0.0 - 5.0	0.488 - 0.6 (J)	0.1 (UJ)	0.0065	8.1 (J) - 8.22	0.819 - 1.15	NR	0.1 - 3.8	0.096 (U) - 1.5 (R)
5.0 - 10.0	0.06 (UJ) - 0.817	0.1 (UJ)	0.0024 (R) - 0.01	7.66 (J) - 8.71 (J)	0.7 (J) - 1.1 (J)	0.103	2.1 (J) - 3.8	0.081 - 0.66 (R)
10.0 - 12.5	0.06 (UJ) - 0.817	0.06 (UJ)	0.01	7.66 (J) - 8.71 (J)	0.7 (J) - 0.802 (J)	0.103	2.1 (J) - 2.5	0.081 - 0.66 (R)
12.5 - 15.0	NR	NR	0.00013 (R)	11.30 (J)	0.765 (J)	NR	1.1	0.047 (U)
15.0 - 17.5	NR	NR	0.00013 (R)	11.30 (J)	0.765 (J)	NR	1.1	0.047 (U)
17.5 - 20.0	NR	NR	0.0013 (R)	13.40 (J)	0.812 (J)	NR	0.66	0.0 (U)
20.0 - 22.5	NR	NR	0.0013 (R)	13.40 (J)	0.812 (J)	NR	0.66	0.0 (U)
22.5 - 25.0	NR	NR	NR	14.0 - 14.7	0.706 - 0.813	NR	0.42 - 0.44	NR
25.0 - 27.5	NR	NR	NR	14.0 - 14.7	0.706 - 0.813	NR	0.42 - 0.44	NR
27.5 - 30.0	NR	NR	0.00057	12.8 (J)	1.23 (J)	NR	0.075	0.24 (R)
30.0 - 32.5	NR	NR	0.0019 (R)	10.2 - 11.6 (J)	0.814 - 1.07 (J)	NR	0.77	0.08 (R) - 0.92
32.5 - 35.0	0.07 (J)	NR	0.0038 (R) - 0.024 (R)	10.59 - 13.1 (J)	0.4901 - 1.25 (J)	NR	0.19 - 0.84	0.56 - 0.86 (U)
35.0 - 37.5	0.07 (J)	NR	0.0038 (R) - 0.024 (R)	10.59 - 13.1 (J)	0.4901 - 1.25 (J)	NR	0.19 - 0.84	0.56 - 0.86 (U)
Average	0.4	0.0	0.0	11.1	0.9	0.2	1.2	0.3

Summary of Investigation for 100-DR-1 Operable Unit - Radionuclide Constituents

Site Identification with depth (ft) of sample collection	Thorium 228 (pCi/g)	Thorium 232 (pCi/g)	Uranium 233/234 (pCi/g)	Uranium 235 (pCi/g)	Uranium 238 (pCi/g)	Comments
116-D-7	Retention Basin					
0.0 - 10.0	0.538 (J)	NS	NS	0.0042 (R)	0.18 (R)	
10.0 - 12.5	NS	NS	NS	NS	NS	
12.5 - 15.0	NS	NS	NS	NS	NS	
15.0 - 17.5	NS	NS	NS	NS	NS	
17.5 - 20.0	NS	NS	NS	NS	NS	
20.0 - 22.5	NS	NS	NS	NS	NS	
22.5 - 25.0	NS	NS	NS	NS	NS	
25.0 - 27.5	NS	NS	NS	NS	NS	
27.5 - 30.0	0.449 (J)	NS	NS	0.0046 (R)	0.13 (R)	
30.0 - 32.5	0.449 (J)	NS	NS	0.0046 (R)	0.13 (R)	
32.5 - 35.0	0.56 (J)	NS	NS	0.015 (R)	0.18 (R)	
35.0 - 37.5	0.56 (J)	NS	NS	0.015 (R)	0.18 (R)	
Average	0.5	NS	NS	0.0	0.2	
116-DR-9	Process Effluent Retention Basin					Estimated values throughout data are missing qualifiers
0.0 - 5.0	0.38 (J) - 0.476	NR	NR	0.0044 (R)	0.15 (R)	
5.0 - 10.0	0.38 (J) - 0.476	NR	NR	0.0019 (R)	0.13 (R) - 0.14 (R)	
10.0 - 12.5	0.419 (J) - 0.475 (J)	NR	NR	0.0019 (R)	0.13 (R) - 0.14 (R)	
12.5 - 15.0	0.538 (J)	NR	NR	0.0022 (R)	0.12 (R)	
15.0 - 17.5	0.538 (J)	NR	NR	0.0022 (R)	0.12 (R)	
17.5 - 20.0	0.562 (J)	NR	NR	0.0067 (R)	0.13 (R)	
20.0 - 22.5	0.562 (J)	NR	NR	0.0067 (R)	0.13 (R)	
22.5 - 25.0	0.512 - 0.575	NR	NR	NR	0.085 - 0.2	
25.0 - 27.5	0.512 - 0.575	NR	NR	NR	0.085 - 0.2	
27.5 - 30.0	0.69 (J)	NR	NR	0.0056 (R)	0.17 (R)	
30.0 - 32.5	0.507 - 0.69 (J)	NR	NR	0.0046 (R) - 0.0056 (R)	0.12 (R) - 0.17 (R)	
32.5 - 35.0	0.53 (J) - 1.02	0.7117	0.51 (J)	0.0073 (R) - 0.01 (UJ)	0.096 (R) - 0.46 (J)	
35.0 - 37.5	0.53 (J) - 1.02	0.7117	0.51 (J)	0.0073 (R) - 0.01 (UJ)	0.096 (R) - 0.46 (J)	
Average	0.6	0.7	0.5	0.0	0.2	

Summary of Investigation for 100-DR-1 Operable Unit - Radionuclide Constituents

Site Identification with depth (ft) of sample collection	Gross Alpha (pCi/g)	Gross Beta (pCi/g)	Americium 241 (pCi/g)	Beryllium 7 (pCi/g)	Carbon 14 (pCi/g)	Cesium 137 (pCi/g)	Cobalt 58 (pCi/g)	Cobalt 60 (pCi/g)
116-DR-1	Trench							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	5.6 (R)	160.0 (R)	0.15 (J)	200.0 (UJ)	0.084 (R)	147.0 (J)	14.1 (J)	23.1 (J)
15.0 - 17.5	5.6 (R)	160.0 (R)	0.15 (J)	200.0 (UJ)	0.084 (R)	147.0 (J)	14.1 (J)	23.1 (J)
17.5 - 20.0	2.6 (R)	49.0 (R)	0.034 (J)	30.0 (UJ)	0.17 (R)	28.8 (J)	2.0 (UJ)	1.59 (J) - 3.75 (J)
20.0 - 22.5	2.6 (R)	49.0 (R)	0.034 (J)	30.0 (UJ)	0.17 (R)	28.8 (J)	2.0 (UJ)	1.59 (J) - 3.75 (J)
22.5 - 25.0	5.2 (R) - 5.7 (R)	25.0 (R) - 26.0 (R)	0.0024 (R) - 0.009 (R)	0.8 (UJ)	0.082 (R) - 0.53 (R)	0.03 (UJ)	0.06 (UJ) - 0.07 (UJ)	0.03 (UJ)
25.0 - 27.5	5.2 (R) - 5.7 (R)	25.0 (R) - 26.0 (R)	0.0024 (R) - 0.009 (R)	0.8 (UJ)	0.082 (R) - 0.53 (R)	0.03 (UJ)	0.06 (UJ) - 0.07 (UJ)	0.03 (UJ)
27.5 - 30.0	0.0 (R)	34.0 (R)	0.013 (R)	2.0 (UJ)	0.01 (R)	0.198 (J)	0.01 (UJ)	0.03 (UJ)
30.0 - 32.5	0.0 (R)	34.0 (R)	0.013 (R)	2.0 (UJ)	0.01 (R)	0.198 (J)	0.01 (UJ)	0.03 (UJ)
Average	3.4	67.1	0.1	0.0	0.1	44.0	3.5	6.4
116-DR-2	Trench							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	8.2 (R)	370.0 (R)	0.026 (J)	90.0 (UJ)	0.83 (R)	233.0 (J)	2.0 (UJ)	3.75 (J)
15.0 - 17.5	8.2 (R)	370.0 (R)	0.026 (J)	90.0 (UJ)	0.83 (R)	233.0 (J)	2.0 (UJ)	3.75 (J)
17.5 - 20.0	3.2 (R)	200.0 (R)	0.0055 (J)	100.0 (UJ)	0.68 (R)	177.0 (J)	0.1 (UJ)	0.567 (J)
20.0 - 22.5	3.2 (R)	200.0 (R)	0.0055 (J)	100.0 (UJ)	0.68 (R)	177.0 (J)	0.1 (UJ)	0.567 (J)
22.5 - 25.0	2.1 (R) - 4.77 (R)	24.3 (R) - 39.0 (R)	NR	NR	0.0 (N) - 0.12 (R)	15.4 (J)	NR	0.1106 (J)
25.0 - 27.5	2.1 (R) - 4.77 (R)	24.3 (R) - 39.0 (R)	NR	NR	0.0 (N) - 0.12 (R)	15.4 (J)	NR	0.1106 (J)
27.5 - 30.0	NS	NS	NS	NS	NS	NS	NS	NS
30.0 - 32.5	5.7 (R)	32.0 (R)	NR	NR	0.19 (R)	NR	NR	NR
32.5 - 35.0	NS	NS	NS	NS	NS	NS	NS	NS
35.0 - 37.5	3.1 (R)	32.0 (R)	NR	NR	0.0066 (R)	NR	NR	NR
Average	4.8	158.4	0.0	0.0	0.4	141.8	0.0	1.5
116-D-2	Pluto Crib							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	4.4 (R)	290.0 (R)	0.1 (R)	10.0 (UJ)	0.044 (R)	105.0 (J)	0.3 (UJ)	0.162 (J)
12.5 - 15.0	4.4 (R)	290.0 (R)	0.1 (R)	10.0 (UJ)	0.044 (R)	105.0 (J)	0.3 (UJ)	0.162 (J)
15.0 - 17.5	2.6 (R)	63.0 (R)	0.015 (J)	7.0 (UJ)	0.0 (NR)	19.9 (J)	0.2 (UJ)	0.06 (UJ)
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	NS	NS	NS	NS	NS	NS	NS	NS
22.5 - 25.0	6.8 (R)	0.22 (R)	0.0006 (J)	2.0 (UJ)	0.0 (NR)	1.07 (J)	0.09 (UJ)	0.02 (UJ)
Average	4.6	160.8	0.1	0.0	0.0	57.7	0.0	0.1

Summary of Investigation for 100-DR-1 Operable Unit - Radionuclide Constituents

Site Identification with depth (ft) of sample collection	Europium 152 (pCi/g)	Europium 154 (pCi/g)	Plutonium 239/240 (pCi/g)	Potassium 40 (pCi/g)	Radium 226 (pCi/g)	Sodium 22 (pCi/g)	Strontium 90 (pCi/g)	Technetium 99 (pCi/g)
116-DR-1	Trench							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	258.0 (J)	25.7 (J)	0.82 (J)	20.0 (J)	7.0 (UJ)	9.91 (J)	10.0 (J)	0.91 (R)
15.0 - 17.5	258.0 (J)	25.7 (J)	0.82 (J)	20.0 (J)	7.0 (UJ)	9.91 (J)	10.0 (J)	0.91 (R)
17.5 - 20.0	13.3 (J)	1.59 (J)	0.11 (J)	8.42 (J) - 10.0 (J)	4.0 (UJ)	0.61 (J) - 0.979 (J)	0.78 (J) - 2.2	0.4 (UJ) - 0.53 (R)
20.0 - 22.5	13.3 (J)	1.59 (J)	0.11 (J)	8.42 (J) - 10.0 (J)	4.0 (UJ)	0.61 (J) - 0.979 (J)	0.78 (J) - 2.2	0.4 (UJ) - 0.53 (R)
22.5 - 25.0	0.323 (J) - 0.336 (J)	NR	0.012 (J) - 0.019 (J)	9.84 (J) - 10.3 (J)	0.66 (J) - 0.924 (J)	NR	1.7 (J)	0.0 (R) - 0.55 (UJ)
25.0 - 27.5	0.323 (J) - 0.336 (J)	NR	0.012 (J) - 0.019 (J)	9.84 (J) - 10.3 (J)	0.66 (J) - 0.924 (J)	NR	1.7 (J)	0.0 (R) - 0.55 (UJ)
27.5 - 30.0	0.339 (J)	0.09 (J)	0.011 (J)	10.2 (J)	0.6 (UJ)	NR	0.16 (J)	0.25 (U)
30.0 - 32.5	0.339 (J)	0.09 (J)	0.011 (J)	10.2 (J)	0.6 (UJ)	NR	0.16 (J)	0.25 (U)
Average	68.0	9.1	0.2	12.4	0.2	5.4	3.3	0.3
116-DR-2	Trench							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	24.0 (J)	2.53 (J)	0.14 (J)	10.0 (J)	4.0 (UJ)	0.979 (J)	0.78 (J)	0.44 (UJ)
15.0 - 17.5	24.0 (J)	2.53 (J)	0.14 (J)	10.0 (J)	4.0 (UJ)	0.979 (J)	0.78 (J)	0.44 (UJ)
17.5 - 20.0	6.39 (J)	0.4 (UJ)	0.034 (J)	9.090 (J)	6.0 (UJ)	0.342 (UJ)	1.1 (J)	0.32 (UJ)
20.0 - 22.5	6.39 (J)	0.4 (UJ)	0.034 (J)	9.090 (J)	6.0 (UJ)	0.342 (UJ)	1.1 (J)	0.32 (UJ)
22.5 - 25.0	NR	NR	NR	8.733 (J)	0.4069 (J)	NR	0.4 - 0.92	0.054 (U) - 0.34
25.0 - 27.5	NR	NR	NR	8.733 (J)	0.4069 (J)	NR	0.4 - 0.92	0.054 (U) - 0.34
27.5 - 30.0	NS	NS	NS	NS	NS	NS	NS	NS
30.0 - 32.5	NR	NR	NR	NR	NR	NR	0.99	1.1 (R)
32.5 - 35.0	NS	NS	NS	NS	NS	NS	NS	NS
35.0 - 37.5	NR	NR	NR	NR	NR	NR	1.7	0.099 (U)
Average	15.2	1.3	0.1	9.3	0.1	0.5	1.0	0.2
116-D-2	Pluto Crib							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	6.87 (J)	5.01 (J)	1.0 (R)	10.7 (J)	13.0 (J)	0.214 (J)	26.0	0.058 (R)
12.5 - 15.0	6.87 (J)	5.01 (J)	1.0 (R)	10.7 (J)	13.0 (J)	0.214 (J)	26.0	0.058 (R)
15.0 - 17.5	1.26 (J)	0.2 (UJ)	0.14 (R)	13.4 (J)	1.0 (UJ)	NR	3.6	0.08
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	NS	NS	NS	NS	NS	NS	NS	NS
22.5 - 25.0	0.09 (UJ)	0.1 (UJ)	0.014 (R)	8.54 (J)	0.5 (UJ)	NR	0.33	0.0 (NU)
Average	3.8	2.5	0.5	10.8	6.5	0.2	14.0	0.0

Summary of Investigation for 100-DR-1 Operable Unit - Radionuclide Constituents

Site Identification with depth (ft) of sample collection	Thorium 228 (pCi/g)	Thorium 232 (pCi/g)	Uranium 233/234 (pCi/g)	Uranium 235 (pCi/g)	Uranium 238 (pCi/g)	Comments
116-DR-1	Trench					
0.0 - 10.0	NS	NS	NS	NS	NS	
10.0 - 12.5	NS	NS	NS	NS	NS	
12.5 - 15.0	0.8 (UJ)	NS	NS	0.013 (J)	0.2 (J)	
15.0 - 17.5	0.8 (UJ)	NS	NS	0.013 (J)	0.2 (J)	
17.5 - 20.0	0.4 (UJ) - 0.508 (J)	NS	NS	0.0030 (UJ) - 0.0130 (J)	0.17 (J) - 0.19 (J)	
20.0 - 22.5	0.4 (UJ) - 0.508 (J)	NS	NS	0.0030 (UJ) - 0.0130 (J)	0.17 (J) - 0.19 (J)	
22.5 - 25.0	0.428 (J) - 0.464 (J)	NS	NS	0.0024 (UJ) - 0.0051 (J)	0.11 (J) - 0.13 (J)	
25.0 - 27.5	0.428 (J) - 0.464 (J)	NS	NS	0.0024 (UJ) - 0.0051 (J)	0.11 (J) - 0.13 (J)	
27.5 - 30.0	0.433 (J)	NS	NS	0.0013 (UJ)	0.12 (J)	
30.0 - 32.5	0.433 (J)	NS	NS	0.0013 (UJ)	0.12 (J)	
Average	0.3	NS	NS	0.0	0.2	
116-DR-2	Trench					
0.0 - 10.0	NS	NS	NS	NS	NS	
10.0 - 12.5	NS	NS	NS	NS	NS	
12.5 - 15.0	0.4 (UJ)	NR	NS	0.003 (UJ)	0.17 (J)	
15.0 - 17.5	0.4 (UJ)	NR	NS	0.003 (UJ)	0.17 (J)	
17.5 - 20.0	0.6 (UJ)	NR	NS	0.0044 (UJ)	0.14 (J)	
20.0 - 22.5	0.6 (UJ)	NR	NS	0.0044 (UJ)	0.14 (J)	
22.5 - 25.0	0.3665 (J)	0.4833	NS	NR	NR	
25.0 - 27.5	0.3665 (J)	0.4833	NS	NR	NR	
27.5 - 30.0	NS	NS	NS	NS	NS	
30.0 - 32.5	NR	NR	NS	NR	NR	
32.5 - 35.0	NS	NS	NS	NS	NS	
35.0 - 37.5	NR	NR	NS	NR	NR	
Average	0.1	0.5	NS	0.0	0.2	
116-D-2	Pluto Crib					
0.0 - 10.0	NS	NS	NS	NS	NS	
10.0 - 12.5	0.377 (J)	NS	NS	0.0084 (R)	0.13 (R)	
12.5 - 15.0	0.377 (J)	NS	NS	0.0084 (R)	0.13 (R)	
15.0 - 17.5	0.63 (J)	NS	NS	0.0054 (R)	0.18 (R)	
17.5 - 20.0	NS	NS	NS	NS	NS	
20.0 - 22.5	NS	NS	NS	NS	NS	
22.5 - 25.0	0.423 (J)	NS	NS	0.017 (R)	0.092 (R)	
Average	0.5	NS	NS	0.0	0.1	

Summary of Investigation for 100-DR-1 Operable Unit - Radionuclide Constituents

Site Identification with depth (ft) of sample collection	Gross Alpha (pCi/g)	Gross Beta (pCi/g)	Americium 241 (pCi/g)	Beryllium 7 (pCi/g)	Carbon 14 (pCi/g)	Cesium 137 (pCi/g)	Cobalt 58 (pCi/g)	Cobalt 60 (pCi/g)
116-D-9	Reactor Confinement Seal Pit Crib							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	2.3 (R)	20.0 (R)	0.0061 (J)	0.2 (UJ)	0.26 (R)	0.01 (UJ)	0.02 (UJ)	0.01 (UJ)
17.5 - 20.0	2.3 (R)	20.0 (R)	0.0061 (J)	0.2 (UJ)	0.26 (R)	0.01 (UJ)	0.02 (UJ)	0.01 (UJ)
20.0 - 22.5	NS	NS	NS	NS	NS	NS	NS	NS
22.5 - 25.0	2.9 (R)	25.0 (R)	0.0059 (J)	0.5 (UJ)	0.15 (R)	0.02 (UJ)	0.04 (UJ)	0.02 (UJ)
25.0 - 27.5	2.9 (R)	25.0 (R)	0.0059 (J)	0.5 (UJ)	0.15 (R)	0.02 (UJ)	0.04 (UJ)	0.02 (UJ)
Average	2.6	22.5	0.0	0.0	0.2	0.0	0.0	0.0
132-D-3	Effluent Pumping Station							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	3.1 (R)	23.0 (R)	0.01 (R)	2.0 (UJ)	0.0 (NR)	0.02 (UJ)	0.1 (UJ)	0.03 (UJ)
20.0 - 22.5	3.1 (R)	23.0 (R)	0.01 (R)	2.0 (UJ)	0.0 (NR)	0.02 (UJ)	0.1 (UJ)	0.03 (UJ)
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	3.7 (R)	21.0 (R)	0.0014 (R)	2.0 (UJ)	0.076 (R)	0.03 (UJ)	0.1 (UJ)	0.03 (UJ)
27.5 - 30.0	NS	NS	NS	NS	NS	NS	NS	NS
30.0 - 32.5	NS	NS	NS	NS	NS	NS	NS	NS
32.5 - 35.0	NS	NS	NS	NS	NS	NS	NS	NS
35.0 - 37.5	3.9 (R)	21.0 (R)	0.0031 (R)	2.0 (UJ)	0.033 (R)	0.03 (UJ)	0.1 (UJ)	0.02 (UJ)
37.5 - 40.0	3.9 (R)	21.0 (R)	0.0031 (R)	2.0 (UJ)	0.033 (R)	0.03 (UJ)	0.1 (UJ)	0.02 (UJ)
Average	3.5	21.8	0.0	0.0	0.0	0.0	0.0	0.0
116-D-5	Outfall Structure							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	8.9 (R)	3.3 (R)	0.0013 (R)	0.4 (UJ)	0.40 (R)	0.03 (UJ)	0.04 (UJ)	0.02 (J)
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	5.7 (R)	28.0 (R)	0.0 (NR)	0.4 (UJ)	0.27 (R)	0.02 (UJ)	0.03 (UJ)	0.02 (UJ)
Average	7.3	15.7	0.0	0.0	0.3	0.0	0.0	0.0

Summary of Investigation for 100-DR-1 Operable Unit - Radionuclide Constituents

Site Identification with depth (ft) of sample collection	Europium 152 (pCi/g)	Europium 154 (pCi/g)	Plutonium 239/240 (pCi/g)	Potassium 40 (pCi/g)	Radium 226 (pCi/g)	Sodium 22 (pCi/g)	Strontium 90 (pCi/g)	Technetium 99 (pCi/g)
116-D-9	Reactor Confinement Seal Pit Crib							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	0.0049 (UJ)	7.39 (J)	0.355 (UJ)	NS	2.9 (J)	0.0 (U)
17.5 - 20.0	NS	NS	0.0049 (UJ)	7.39 (J)	0.355 (UJ)	NS	2.9 (J)	0.0 (U)
20.0 - 22.5	NS	NS	NS	NS	NS	NS	NS	NS
22.5 - 25.0	NS	NS	0.00088 (UJ)	9.35 (J)	0.726 (UJ)	NS	0.088 (J)	0.18 (U)
25.0 - 27.5	NS	NS	0.00088 (UJ)	9.35 (J)	0.726 (UJ)	NS	0.088 (J)	0.18 (U)
Average	NS	NS	0.0	8.4	0.0	NS	1.5	0.0
132-D-3	Effluent Pumping Station							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	0.06 (UJ)	0.08 (UJ)	0.0007 (UJ)	10.5 (J)	0.927 (J)	NS	0.15	0.0 (NU)
20.0 - 22.5	0.06 (UJ)	0.08 (UJ)	0.0007 (UJ)	10.5 (J)	0.927 (J)	NS	0.15	0.0 (NU)
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	0.08 (UJ)	0.1 (UJ)	0.0005 (UJ)	9.22 (J)	0.699 (J)	NS	2.7	0.6 (U)
27.5 - 30.0	NS	NS	NS	NS	NS	NS	NS	NS
30.0 - 32.5	NS	NS	NS	NS	NS	NS	NS	NS
32.5 - 35.0	NS	NS	NS	NS	NS	NS	NS	NS
35.0 - 37.5	0.08 (UJ)	0.1 (UJ)	0.00028 (UJ)	10.7 (J)	0.7 (UJ)	NS	0.018	0.66 (U)
37.5 - 40.0	0.08 (UJ)	0.1 (UJ)	0.00028 (UJ)	10.7 (J)	0.7 (UJ)	NS	0.018	0.66 (U)
Average	0.0	0.0	0.0	10.3	0.5	NS	0.6	0.0
116-D-5	Outfall Structure							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	NS	NS	0.0 (R)	12.0 (J)	0.891 (J)	NS	0.047	0.27 (U)
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	NS	NS	0.0067 (R)	12.0 (J)	0.75 (J)	NS	0.046 (U)	0.0 (NR)
Average	NS	NS	0.0	12.0	0.8	NS	0.0	0.0

Summary of Investigation for 100-DR-1 Operable Unit - Radionuclide Constituents

Site Identification with depth (ft) of sample collection	Thorium 228 (pCi/g)	Thorium 232 (pCi/g)	Uranium 233/234 (pCi/g)	Uranium 235 (pCi/g)	Uranium 238 (pCi/g)	Comments
116-D-9	Reactor Confinement Seal Pit Crib					
0.0 - 10.0	NS	NS	NS	NS	NS	
10.0 - 12.5	NS	NS	NS	NS	NS	
12.5 - 15.0	NS	NS	NS	NS	NS	
15.0 - 17.5	0.352 (J)	NS	NS	0.0017 (UJ)	0.18 (J)	
17.5 - 20.0	0.352 (J)	NS	NS	0.0017 (UJ)	0.18 (J)	
20.0 - 22.5	NS	NS	NS	NS	NS	
22.5 - 25.0	0.479 (J)	NS	NS	0.0012 (UJ)	0.32 (J)	
25.0 - 27.5	0.479 (J)	NS	NS	0.0012 (UJ)	0.32 (J)	
Average	0.4	NS	NS	0.0	0.3	
132-D-3	Effluent Pumping Station					
0.0 - 10.0	NS	NS	NS	NS	NS	
10.0 - 12.5	NS	NS	NS	NS	NS	
12.5 - 15.0	NS	NS	NS	NS	NS	
15.0 - 17.5	NS	NS	NS	NS	NS	
17.5 - 20.0	0.49 (J)	NS	NS	0.0058 (UJ)	0.13 (J)	
20.0 - 22.5	0.49 (J)	NS	NS	0.0058 (UJ)	0.13 (J)	
22.5 - 25.0	NS	NS	NS	NS	NS	
25.0 - 27.5	0.472 (J)	NS	NS	0.0042 (UJ)	0.10 (J)	
27.5 - 30.0	NS	NS	NS	NS	NS	
30.0 - 32.5	NS	NS	NS	NS	NS	
32.5 - 35.0	NS	NS	NS	NS	NS	
35.0 - 37.5	0.448 (J)	0.9 (UJ)	NS	0.007 (R)	0.17 (R)	
37.5 - 40.0	0.448 (J)	0.9 (UJ)	NS	0.007 (R)	0.17 (R)	
Average	0.5	0.0	NS	0.0	0.1	
116-D-5	Outfall Structure					
0.0 - 10.0	NS	NS	NS	NS	NS	
10.0 - 12.5	NS	NS	NS	NS	NS	
12.5 - 15.0	NS	NS	NS	NS	NS	
15.0 - 17.5	NS	NS	NS	NS	NS	
17.5 - 20.0	NS	NS	NS	NS	NS	
20.0 - 22.5	0.59 (J)	NS	NS	0.0013 (R)	0.12 (R)	
22.5 - 25.0	NS	NS	NS	NS	NS	
25.0 - 27.5	0.49 (J)	NS	NS	0.0055 (R)	0.17 (R)	
Average	0.5	NS	NS	0.0	0.1	

Summary of Investigation for 100-DR-1 Operable Unit - Radionuclide Constituents

Site Identification with depth (ft) of sample collection	Gross Alpha (pCi/g)	Gross Beta (pCi/g)	Americium 241 (pCi/g)	Beryllium 7 (pCi/g)	Carbon 14 (pCi/g)	Cesium 137 (pCi/g)	Cobalt 58 (pCi/g)	Cobalt 60 (pCi/g)
116-DR-5	Outfall Structure							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	4.7 (R)	30.0 (R)	0.0048 (R)	0.8 (UJ)	NR	0.02 (UJ)	0.06 (UJ)	0.02 (UJ)
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	8.9 (R)	36.0 (R)	0.0026 (R)	1.0 (UJ)	0.084 (R)	0.03 (J)	0.09 (UJ)	0.03 (UJ)
Average	6.8	33.0	0.0	0.0	0.1	0.0	0.0	0.0
116-D-3	Crib							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	2.1 (R)	21.0 (R)	0.0043 (R)	NR	0.15 (R)	0.01 (UJ)	0.02 (UJ)	0.009 (UJ)
15.0 - 17.5	2.1 (R)	21.0 (R)	0.0043 (R)	NR	0.15 (R)	0.01 (UJ)	0.02 (UJ)	0.009 (UJ)
17.5 - 20.0	2.1 (R)	19.0 (R)	0.013 (R)	0.5 (UJ)	0.18 (R)	0.02 (UJ)	0.05 (UJ)	0.02 (UJ)
20.0 - 22.5	2.1 (R)	19.0 (R)	0.013 (R)	0.5 (UJ)	0.18 (R)	0.02 (UJ)	0.05 (UJ)	0.02 (UJ)
Average	2.1	20.0	0.0	0.0	0.2	0.0	0.0	0.0
116-D-4	Crib							
0.0 - 5.0	NS	NS	NS	NS	NS	NS	NS	NS
5.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	1.6 (R)	25.0 (R)	0.0031 (J)	0.4 (UJ)	0.079 (UJ)	0.02 (UJ)	0.04 (UJ)	0.02 (UJ)
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	4.7 (R)	23.0 (R)	0.015 (UJ)	0.4 (UJ)	0.015 (UJ)	0.02 (UJ)	0.04 (UJ)	0.02 (UJ)
22.5 - 25.0	4.7 (R)	23.0 (R)	0.015 (UJ)	0.4 (UJ)	0.015 (UJ)	0.02 (UJ)	0.04 (UJ)	0.02 (UJ)
Average	3.7	23.7	0.0	0.0	0.0	0.0	0.0	0.0

Summary of Investigation for 100-DR-1 Operable Unit - Radionuclide Constituents

Site Identification with depth (ft) of sample collection	Europium 152 (pCi/g)	Europium 154 (pCi/g)	Plutonium 239/240 (pCi/g)	Potassium 40 (pCi/g)	Radium 226 (pCi/g)	Sodium 22 (pCi/g)	Strontium 90 (pCi/g)	Technetium 99 (pCi/g)
116-DR-5	Outfall Structure							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	0.05 (UJ)	0.06 (UJ)	0.002 (R)	13.0 (J)	0.752 (J)	NS	0.24	0.12 (U)
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	NS	NS	0.0019 (R)	13.5 (J)	0.807 (J)	NS	0.21	0.32 (U)
Average	0.0	0.0	0.0	13.3	0.8	NS	0.2	0.0
116-D-3	Crib							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	NS	0.00089 (UJ)	8.92 (J)	0.512 (UJ)	NS	0.078 (U)	0.34 (R)
15.0 - 17.5	NS	NS	0.00089 (UJ)	8.92 (J)	0.512 (UJ)	NS	0.078 (U)	0.34 (R)
17.5 - 20.0	NS	NS	0.0019 (UJ)	8.99 (J)	0.685 (UJ)	NS	0.085	0.43 (R)
20.0 - 22.5	NS	NS	0.0019 (UJ)	8.99 (J)	0.685 (UJ)	NS	0.085	0.43 (R)
Average	NS	NS	0.0	9.0	0.0	NS	0.0	0.4
116-D-4	Crib							
0.0 - 5.0	NS	NS	NS	NS	NS	NS	NS	NS
5.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	0.00058 (UJ)	9.69 (J)	0.54 (J)	NS	0.46 (J)	0.072 (UJ)
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	NS	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	NS	NS	0.0011 (UJ)	9.09 (J)	0.731 (J)	NS	0.13 (J)	0.12 (UJ)
22.5 - 25.0	NS	NS	0.0011 (UJ)	9.09 (J)	0.731 (J)	NS	0.13 (J)	0.12 (UJ)
Average	NS	NS	0.0	9.3	0.7	NS	0.2	0.0

Summary of Investigation for 100-DR-1 Operable Unit - Radionuclide Constituents

Site Identification with depth (ft) of sample collection	Thorium 228 (pCi/g)	Thorium 232 (pCi/g)	Uranium 233/234 (pCi/g)	Uranium 235 (pCi/g)	Uranium 238 (pCi/g)	Comments
116-DR-5	Outfall Structure					
0.0 - 10.0	NS	NS	NS	NS	NS	
10.0 - 12.5	NS	NS	NS	NS	NS	
12.5 - 15.0	NS	NS	NS	NS	NS	
15.0 - 17.5	NS	NS	NS	NS	NS	
17.5 - 20.0	NS	NS	NS	NS	NS	
20.0 - 22.5	0.559 (J)	NS	NS	0.002 (R)	0.12 (R)	
22.5 - 25.0	NS	NS	NS	NS	NS	
25.0 - 27.5	0.657 (J)	NS	NS	0.0041 (R)	0.14 (R)	
Average	0.6	NS	NS	0.0	0.1	
116-D-3	Crib					
0.0 - 10.0	NS	NS	NS	NS	NS	
10.0 - 12.5	NS	NS	NS	NS	NS	
12.5 - 15.0	0.17 (J)	NS	NS	0.0052 (UJ)	0.17 (J)	
15.0 - 17.5	0.17 (J)	NS	NS	0.0052 (UJ)	0.17 (J)	
17.5 - 20.0	0.49 (J)	NS	NS	0.019 (UJ)	0.16 (J)	
20.0 - 22.5	0.49 (J)	NS	NS	0.019 (UJ)	0.16 (J)	
Average	0.3	0.0	0.0	0.0	0.2	
116-D-4	Crib					
0.0 - 5.0	NS	NS	NS	NS	NS	
5.0 - 10.0	NS	NS	NS	NS	NS	
10.0 - 12.5	0.425 (J)	NS	NS	0.0044 (J)	0.15 (J)	
12.5 - 15.0	NS	NS	NS	NS	NS	
15.0 - 17.5	NS	NS	NS	NS	NS	
17.5 - 20.0	NS	NS	NS	NS	NS	
20.0 - 22.5	0.39 (J)	NS	NS	0.0052 (UJ)	0.084 (J)	
22.5 - 25.0	0.39 (J)	NS	NS	0.0052 (UJ)	0.084 (J)	
Average	0.4	NS	NS	0.0	0.1	

Summary of Investigation for 100-DR-1 Operable Unit - Radionuclide Constituents

Site Identification with depth (ft) of sample collection	Gross Alpha (pCi/g)	Gross Beta (pCi/g)	Americium 241 (pCi/g)	Beryllium 7 (pCi/g)	Carbon 14 (pCi/g)	Cesium 137 (pCi/g)	Cobalt 58 (pCi/g)	Cobalt 60 (pCi/g)
130-D-1	Underground Storage Tank							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	1.0	25	0.0067	NR	0.0036 (R)	NR	NR	NR
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	1.6	22.0	0.00055 (R)	0.8 (UJ)	0.0036 (R)	0.02 (UJ)	0.06 (UJ)	0.02 (UJ)
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	0.52 (R)	15.0 (R)	0.00087 (R)	1.0 (UJ)	0.0130 (R)	0.02 (UJ)	0.07 (UJ)	0.02 (UJ)
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	1.0 (R)	21.0 (R)	0.0054 (R)	0.9 (UJ)	0.067 (R)	0.02 (UJ)	0.06 (UJ)	0.02 (UJ)
Average	1.0	20.8	0.0	0.0	0.0	0.0	0.0	0.0
108-D	Demolished Office Building							
0.0 - 5.0	NS	NS	NS	NS	NS	NS	NS	NS
5.0 - 10.0	SNL	SNL	SNL	SNL	0.0 (NJ) - 39.0 (R)	SNL	SNL	SNL
Average	SNL	SNL	SNL	SNL	19.5	SNL	SNL	SNL
	Sodium Dichromate Tanks							
0.0 - 5.0	SNL	SNL	SNL	SNL	SNL	SNL	SNL	SNL
Average	SNL	SNL	SNL	SNL	SNL	SNL	SNL	SNL
103-D	Fuel Element Storage Building							
WIPE SAMPLES	1.04 - 358.0	5.56 - 2670.0	33.20	SNL	SNL	2770.0	4.83	4.83
Average	179.5	1337.8	33.2	SNL	SNL	2770.0	4.8	4.8
126-D-2	Solid Waste Landfill							
4A, 4B, 18	Burial Grounds							
115-D	Demolished Gas Recirculation Building							
117-D	Demolished Exhaust Air Filter Building							
	Process Effluent Pipelines							
107-D/107-DR	Sludge Disposal Trenches (5)							

Summary of Investigation for 100-DR-1 Operable Unit - Radionuclide Constituents

Site Identification with depth (ft) of sample collection	Europium 152 (pCi/g)	Europium 154 (pCi/g)	Plutonium 239/240 (pCi/g)	Potassium 40 (pCi/g)	Radium 226 (pCi/g)	Sodium 22 (pCi/g)	Strontium 90 (pCi/g)	Technetium 99 (pCi/g)
130-D-1	Underground Storage Tank							
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NR	NR	0.0006 (R)	9.23 (J)	0.83 (J)	NS	NR	1.1
12.5 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS
15.0 - 17.5	0.05 (UJ)	0.07 (UJ)	0.004 (R)	9.54 (J)	0.4 (UJ)	NS	0.09 (U)	1.0
17.5 - 20.0	NS	NS	NS	NS	NS	NS	NS	NS
20.0 - 22.5	0.06 (UJ)	0.08 (UJ)	0.00088 (R)	8.75 (J)	0.5 (UJ)	NS	0.13 (U)	0.28 (U)
22.5 - 25.0	NS	NS	NS	NS	NS	NS	NS	NS
25.0 - 27.5	0.06 (UJ)	0.09 (UJ)	0.00092 (R)	9.07 (J)	0.583 (J)	NS	0.083	0.16 (U)
Average	0.0	0.0	0.0	9.1	0.4	NS	0.0	0.5
108-D	Demolished Office Building							
0.0 - 5.0	NS	NS	NS	NS	NS	NS	NS	NS
5.0 - 10.0	SNL	SNL	SNL	12.1 (R) - 13.0 (R)	0.57 (R) - 0.877 (J)	NS	SNL	SNL
Average	SNL	SNL	SNL	12.6	0.7	NS	SNL	SNL
	Sodium Dichromate Tanks							
0.0 - 5.0	SNL	SNL	SNL	10.2 (J) - 12.8 (J)	ND - 0.773 (J)	NS	SNL	SNL
Average	SNL	SNL	SNL	11.5	0.4	NS	SNL	SNL
103-D	Fuel Element Storage Building							
WIPE SAMPLES	30.9	2770.0	SNL	SNL	SNL	NS	SNL	SNL
Average	30.9	2770.0	SNL	SNL	SNL	NS	SNL	SNL
126-D-2	Solid Waste Landfill							
4A, 4B, 18	Burial Grounds							
115-D	Demolished Gas Recirculation Building							
117-D	Demolished Exhaust Air Filter Building							
	Process Effluent Pipelines							
107-D/107-DR	Sludge Disposal Trenches (5)							

Summary of Investigation for 100-DR-1 Operable Unit - Radionuclide Constituents

Site Identification with depth (ft) of sample collection	Thorium 228 (pCi/g)	Thorium 232 (pCi/g)	Uranium 233/234 (pCi/g)	Uranium 235 (pCi/g)	Uranium 238 (pCi/g)	Comments
130-D-1	Underground Storage Tank					
0.0 - 10.0	NS	NS	NS	NS	NS	
10.0 - 12.5	0.572 (J)	NS	NS	0.0046 (R)	0.13 (R)	
12.5 - 15.0	NS	NS	NS	NS	NS	
15.0 - 17.5	0.57 (J)	NS	NS	0.011 (R)	0.15 (R)	
17.5 - 20.0	NS	NS	NS	NS	NS	
20.0 - 22.5	0.398 (J)	NS	NS	0.0056 (R)	0.12 (R)	
22.5 - 25.0	NS	NS	NS	NS	NS	
25.0 - 27.5	0.401 (J)	NS	NS	0.0079 (R)	0.12 (R)	
Average	0.5	0.0	0.0	0.0	0.1	
108-D	Demolished Office Building					
0.0 - 5.0	NS	NS	NS	NS	NS	
5.0 - 10.0	0.681 (J) - 0.82 (R)	0.21 (R) - 0.074 (R)	NS	SNL	SNL	
Average	0.8	0.1	NS	SNL	SNL	
	Sodium Dichromate Tanks					
0.0 - 5.0	0.495 (J) - 0.586 (J)	SNL	NS	SNL	SNL	
Average	0.5	SNL	NS	SNL	SNL	
103-D	Fuel Element Storage Building					
WIPE SAMPLES	SNL	SNL	NS	SNL	SNL	
Average	SNL	SNL	NS	SNL	SNL	
126-D-2	Solid Waste Landfill					Assumed to be non-radioactive
4A, 4B, 18	Burial Grounds					No LFI investigation
115-D	Demolished Gas Recirculation Building					No LFI investigation
117-D	Demolished Exhaust Air Filter Building					No LFI investigation
	Process Effluent Pipelines					No LFI investigation
107-D/107-DR	Sludge Disposal Trenches (5)					No LFI investigation

Summary of Investigation for 100-HR-1 Operable Unit - Radionuclide Constituents

Site Identification with depth (ft) of sample collection	Americium 241 (pCi/g)	Carbon 14 (pCi/g)	Cesium 137 (pCi/g)	Cobalt 60 (pCi/g)	Europium 152 (pCi/g)	Europium 154 (pCi/g)	Plutonium 239/240 (pCi/g)
116-H-1	Process Effluent Disposal Trench						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	0.20	NS	32.0	2.5	54.0	5.4	0.74
12.5 - 15.0	0.16	NS	24.0	1.8	36.0	3.6	0.58
15.0 - 17.5	0.068 - 0.160	NS	11.00 - 24.0	1.80 - 2.2	34.00 - 42.0	3.6	0.33 - 0.64
17.5 - 20.0	0.00 - 0.068	NS	0.25 - 11.0	0.00 (U) - 2.0	0.72 - 42.0	0.34 - 3.6	0.063 - 0.33
20.0 - 22.5	0.00 (U)	NS	0.25	0.0 (U)	0.72	0.34	0.063
22.5 - 25.0	0.006 (U)	NS	0.0 (U)	0.0 (U)	ND	ND	0.034 (J)
25.0 - 27.5	0.006 (U)	NS	0.0 (U)	0.0 (U)	ND	ND	0.034 (J)
Average	0.07	NS	11.34	1.04	21.44	2.13	0.30
116-H-2	Effluent Disposal Trench						
0.0 - 10.0	0.004 (U)	NS	0.0 (U)	0.0 (U)	ND	ND	0.0 (U)
10.0 - 12.5	0.004 (U)	NS	0.0 (U)	0.0 (U)	ND	ND	0.0 (U)
12.5 - 15.0	0.00 (N) - 0.002 (U)	NS	0.0 (U)	0.0 (U)	ND	ND	0.0 (U) - 0.006 (U)
15.0 - 17.5	0.00 (N) - 0.002 (U)	NS	0.0 (U)	0.0 (U)	ND	ND	0.0 (U) - 0.006 (U)
Average	0.00	NS	0.00	0.00	0.00	0.00	0.00
116-H-3	Dummy Decontamination French Drain						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	0.009 (U)	NS	0.0 (U)	0.38	0.54	ND	0.006 (U)
15.0 - 17.5	0.009 (U)	NS	0.0 (U)	0.38	0.54	ND	0.006 (U)
17.5 20.0	0.011 (U)	NS	0.0 (U)	0.13	ND	ND	0.00 (U)
20.0 - 22.5	0.011 (U)	NS	0.0 (U)	0.13	ND	ND	0.00 (U)
Average	0.00	NS	0.00	0.26	0.27	0.00	0.00
116-H-7	Process Effluent Retention Basin						
0.0 - 5.0	0.011 (U)	NS	0.0 (U)	0.0 (U)	ND	ND	0.026 (J)
5.0 - 10.0	0.54 - 0.72	NS	11.0 - 35.0	14.0 - 36.0	120.0 - 260.0	19.0 - 37.0	1.10 - 1.3
10.0 - 12.5	0.72	NS	35.0	36.0	260.0	37.0	1.30
12.5 - 15.0	0.031 (U)	NS	1.70	0.68	4.0	0.50	0.073
15.0 - 17.5	0.031 (U)	NS	1.70	0.68	4.0	0.50	0.073
17.5 - 20.0	0.011 (U)	NS	0.0 (U)	0.0 (U)	ND	ND	0.003 (U)
20.0 - 22.5	0.011 (U)	NS	0.0 (U)	0.0 (U)	ND	ND	0.003 (U)
Average	0.22	NS	9.38	9.71	72.00	10.44	0.43

Summary of Investigation for 100-HR-1 Operable Unit - Radionuclide Constituents

Site Identification with depth (ft) of sample collection	Potassium 40 (pCi/g)	Radium 226 (pCi/g)	Strontium 90 (pCi/g)	Technetium 99 (pCi/g)	Thorium 228 (pCi/g)	Thorium 232 (pCi/g)	Uranium 233/234 (pCi/g)
116-H-1	Process Effluent Disposal Trench						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	ND	1.5 (J)	0.25 (U)	ND	ND	ND
12.5 - 15.0	NS	0.0	1.5 (J)	0.25 (J)	0.95	0.0 (U)	0.0 (U)
15.0 - 17.5	NS	0.0 (U) - 0.85	1.5 (J) - 6.2	0.18 (J) - 0.67	0.44 - 0.95	0.0 (U)	0.0 (U) - 0.62
17.5 - 20.0	NS	0.55 - 0.09	1.3 (J) - 5.5	0.21 (U) - 0.67	0.44 - 0.75	0.0 (U) - 0.89	ND - 0.62
20.0 - 22.5	NS	0.55	1.3 (J)	0.21	0.75	0.89	ND
22.5 - 25.0	NS	0.40	0.0 (N)	0.0 (N)	0.53	0.64	ND
25.0 - 27.5	NS	0.40	0.0 (N)	0.0 (N)	0.53	0.64	ND
Average	NS	0.30	1.65	0.17	0.58	0.37	0.09
116-H-2	Effluent Disposal Trench						
0.0 - 10.0	NS	0.37	0.0 (N)	0.14 (U)	0.49	0.35	ND
10.0 - 12.5	NS	0.37	0.0 (N)	0.14 (U)	0.49	0.35	ND
12.5 - 15.0	NS	0.47 - 0.50	0.0 (N)	0.084 (U) - 0.42 (U)	0.50 - 0.63	0.0 (U)	ND
15.0 - 17.5	NS	0.47 - 0.50	0.0 (N)	0.084 (U) - 0.42 (U)	0.50 - 0.63	0.0 (U)	ND
Average	NS	0.40	0.00	0.00	0.51	0.25	0.00
116-H-3	Dummy Decontamination French Drain						
0.0 - 10.0	NS	NS	NS	NS	NS	NS	NS
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.0	NS	0.0 (U)	0.048 (U)	0.52 (U)	0.58	0.44	ND
15.0 - 17.5	NS	0.0 (U)	0.048 (U)	0.52 (U)	0.58	0.44	ND
17.5 - 20.0	NS	0.45	0.24 (U)	0.20 (U)	0.57	0.39	0.35
20.0 - 22.5	NS	0.45	0.24 (U)	0.20 (U)	0.57	0.39	0.35
Average	NS	0.23	0.00	0.00	0.58	0.42	0.18
116-H-7	Process Effluent Retention Basin						
0.0 - 5.0	NS	0.29	0.0 (N)	0.15 (U)	0.41	0.41	ND
5.0 - 10.0	NS	0.0 (U)	3.20	0.095 (U) - 0.33 (U)	0.0 (U)	0.0 (U)	ND
10.0 - 12.5	NS	0.0 (U)	0.93 (J)	0.10 (U)	0.0 (U)	0.0 (U)	ND
12.5 - 15.0	NS	0.65	0.0 (N)	0.26 (U)	0.81	0.0 (U)	ND
15.0 - 17.5	NS	0.65	0.0 (N)	0.26 (U)	0.81	0.0 (U)	ND
17.5 - 20.0	NS	0.44	1.2 (J)	0.22 (U)	0.46	0.44	ND
20.0 - 22.5	NS	0.44	1.2 (J)	0.22 (U)	0.46	0.44	ND
Average	NS	0.31	0.73	0.00	0.37	0.19	0.00

Summary of Investigation for 100-HR-1 Operable Unit - Radionuclide Constituents

Site Identification with depth (ft) of sample collection	Uranium 235 (pCi/g)	Uranium 238 (pCi/g)	Comments
116-H-1	Process Effluent Disposal Trench		
0.0 - 10.0	NS	NS	
10.0 - 12.5	0.031 (U)	0.61	
12.5 - 15.0	0.00 (U)	0.00 (U)	
15.0 - 17.5	0.00 (U) - 0.13 (U)	0.00 (U) - 0.31	
17.5 - 20.0	0.050 (U) - 0.13 (U)	0.23 (J) - 0.39	
20.0 - 22.5	0.050 (U)	0.39	
22.5 - 25.0	0.043 (U)	0.58	
25.0 - 27.5	0.043 (U)	0.58	
Average	0.00	0.38	
116-H-2	Effluent Disposal Trench		
0.0 - 10.0	0.0 (U)	0.33	
10.0 - 12.5	0.0 (U)	0.33	
12.5 - 15.0	0.0 (U)	0.50 - 0.54	
15.0 - 17.5	0.0 (U)	0.50 - 0.54	
Average	0.00	0.38	
116-H-3	Dummy Decontamination French Drain		
0.0 - 10.0	NS	NS	
10.0 - 12.5	NS	NS	
12.5 - 15.0	0.016 (U)	0.58	
15.0 - 17.5	0.016 (U)	0.58	
17.5 - 20.0	0.00 (U)	0.44	
20.0 - 22.5	0.00 (U)	0.44	
Average	0.00	0.51	
116-H-7	Process Effluent Retention Basin		
0.0 - 5.0	0.023 (U)	0.69	
5.0 - 10.0	0.013 (U) - 0.38	0.47 - 0.68	
10.0 - 12.5	0.38	0.68	
12.5 - 15.0	0.018 (U)	0.5	
15.0 - 17.5	0.018 (U)	0.5	
17.5 - 20.0	0.014 (U)	0.53	
20.0 - 22.5	0.014 (U)	0.53	
Average	0.08	0.59	

Summary of Investigation for 100-HR-1 Operable Unit - Radionuclide Constituents

Site Identification with depth (ft) of sample collection	Americium 241 (pCi/g)	Carbon 14 (pCi/g)	Cesium 137 (pCi/g)	Cobalt 60 (pCi/g)	Europium 152 (pCi/g)	Europium 154 (pCi/g)	Plutonium 239/240 (pCi/g)
116-H-9	Confinement Seal Pit Drainage Crib						
0.0 - 10.0	0.023 (U)	NS	0.0 (U)	0.0 (U)	ND	ND	0.004 (U)
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.6	NS	NS	NS	NS	NS	NS	NS
15.6 - 17.5	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	0.01 (U)	NS	0.29	0.0 (U)	0.36	ND	0.024 (U)
20.0 - 22.5	0.0 (U) - 0.01 (U)	NS	0.0 (U) - 0.29	0.0 (U)	ND - 0.36	ND	0.004 (U) - 0.024 (U)
22.5 - 25.0	0.0 (U)	NS	0.0 (U)	0.0 (U)	ND	ND	0.004 (U)
Average	0.00	NS	0.06	0.00	0.08	0.00	0.00
116-H-5	Process Effluent Outfall Structure						
116-H-7	Sludge Burial Trench						
116-H-3	Effluent Pumping Station						
132-H-2	Exhaust Air Filter Building						
116-H-4	Pluto Crib						
116-H-1	Reactor Exhaust Stack						
	Process Effluent Pipelines						
1607-H-2	Septic Tank						
Sludge Samples	0.038 (R) - 0.09 (R)	NS	0.745 (R) - 0.87 (R)	0.48 (J) - 1.379 (J)	0.95 (J) - 1.120 (J)	NS	0.09 (R) - 0.11 (R)
Average	0.06	NS	0.81	0.93	1.04	NS	0.10
Water Samples(b)	0.1 (R) - 0.2 (R)	NS	6.3 (R) - 12.0 (R)	NR	NR	NS	0.1 (R)
1607-H-4	Septic Tank						
Surface Soil from Tank Leach Field	0.0 (NU)	NS	0.0 (U)	0.0 (U)	0.0 (U)	0.0 (U)	0.003 (U) - 0.005 (U)
Soil from Tank Discharge Pipe	0.0 (NU)	NS	0.67	0.0 (U)	1.2	0.0 (U)	0.006 (U)
Average	0.00	NS	0.34	0.00	0.60	0.00	0.00
	Electrical Facilities						

Summary of Investigation for 100-HR-1 Operable Unit - Radionuclide Constituents

Site Identification with depth (ft) of sample collection	Potassium 40 (pCi/g)	Radium 226 (pCi/g)	Strontium 90 (pCi/g)	Technetium 99 (pCi/g)	Thorium 228 (pCi/g)	Thorium 232 (pCi/g)	Uranium 233/234 (pCi/g)
116-H-9	**Confinement Seal Pit Drainage Crib**						
0.0 - 10.0	NS	0.64	0.085	0.0 (N)	1.2	0.75	ND
10.0 - 12.5	NS	NS	NS	NS	NS	NS	NS
12.5 - 15.6	NS	NS	NS	NS	NS	NS	NS
15.6 - 17.5	NS	NS	NS	NS	NS	NS	NS
17.5 - 20.0	NS	0.71	0.0 (N)	0.23 (U)	1.1	1.10	ND
20.0 - 22.5	NS	0.50 - 0.71	0.0 (N)	0.17 (U) - 0.23 (U)	0.73 - 1.1	0.39 - 1.10	ND
22.5 - 25.0	NS	0.50	0.0 (N)	0.17 (U)	0.73	0.39	ND
Average	NS	0.63	0.01	0.00	1.08	0.75	0.00
116-H-5	**Process Effluent Outfall Structure**						
116-H-7	**Sludge Burial Trench**						
116-H-3	**Effluent Pumping Station**						
132-H-2	**Exhaust Air Filter Building**						
116-H-4	**Pluto Crib**						
116-H-1	**Reactor Exhaust Stack**						
	Process Effluent Pipelines						
1607-H-2	**Septic Tank**						
Sludge Samples	7.03 (J) - 8.053 (J)	0.68 (J) - 1.362 (J)	0.70 (R) - 0.79 (R)	0.4 (U) - 0.6 (U)	0.86 (J) - 0.912 (J)	1.43 (J) - 2.041 (J)	3.3 (R) - 5.8 (R)
Average	7.54	1.02	0.75	0.00	0.89	1.74	4.55
Water Samples(b)	69.0 (J) - 253.0 (J)	20.0 (J) - 35.0 (J)	0.5 (R) - 1.4 (R)	11.2 (R) - 13.8 (R)	13.0 (J) - 23.0 (J)	34.0 (J) - 57.0 (J)	0.1 (R) - 1.7 (R)
1607-H-4	**Septic Tank**						
Surface Soil from Tank Leach Field	12.0 - 14.0	0.44 - 0.45	0.0 (NU) - 0.23 (U)	NS	0.54 - 0.6	0.51 - 0.6	0.41 - 0.57
Soil from Tank Discharge Pipe	8.3	0.37	0.0 (U)	NS	0.40	0.44	0.62
Average	10.65	0.41	0.00	NS	0.48	0.50	0.56
	Electrical Facilities						

Summary of Investigation for 100-HR-1 Operable Unit - Radionuclide Constituents

Site Identification with depth (ft) of sample collection	Uranium 235 (pCi/g)	Uranium 238 (pCi/g)	Comments
116-H-9	Confinement Seal Pit Drainage Crib		
0.0 - 10.0	0.029 (U)	0.47	
10.0 - 12.5	NS	NS	
12.5 - 15.6	NS	NS	
15.6 - 17.5	NS	NS	
17.5 - 20.0	0.00 (U)	0.19 (U)	
20.0 - 22.5	0.00 (U) - 0.015 (U)	0.19 (U) - 0.45	
22.5 - 25.0	0.015 (U)	0.45	
Average	0.00	0.37	
116-H-5	Process Effluent Outfall Structure		No LFI Investigation
116-H-7	Sludge Burial Trench		No LFI Investigation
116-H-3	Effluent Pumping Station		No LFI Investigation
132-H-2	Exhaust Air Filter Building		No LFI Investigation
116-H-4	Pluto Crib		No LFI Investigation
116-H-1	Reactor Exhaust Stack		No LFI Investigation
	Process Effluent Pipelines		No LFI Investigation
1607-H-2	Septic Tank		
Sludge Samples	0.17 (R) - 0.28 (R)	2.6 (R) - 4.4 (R)	
Average	0.23	3.50	
Water Samples(b)	0.1 (R) - 0.2 (R)	0.1 (R) - 1.7 (R)	
1607-H-4	Septic Tank		
Surface Soil from Tank Leach Field	0.026 (U) - 0.058 (U)	0.44 - 0.48	
Soil from Tank Discharge Pipe	0.0 (U)	0.31	
Average	0.00	0.39	
	Electrical Facilities		No suspected Radionuclide Contamination

(b) Units for water samples are pCi/l

Summary of Investigation for Operable Unit 100-NR-1 - Radionuclide Constituents

Site Identification with depth (ft) of sample collection	Gross Alpha (pCi/g)	Gross Beta (pCi/g)	Americium 241 (pCi/g)	Cesium 137 (pCi/g)	Cobalt 60 (pCi/g)	Plutonium 239/240 (pCi/g)	Potassium 40 (pCi/g)	Radium 226 (pCi/g)	Strontium 90 (pCi/g)	Technetium 99 (pCi/g)
116-N-2	Chemical Waste Storage Tank									
0.0 - 6.0	9.5 (J)	58.0	0.062	3.8	100.0	0.15	14.0	0.67	ND	NR
6.0 - 15.0	8.5 (J)	14.0	ND	ND	4.3	ND	16.0	0.55	ND	NR
>15	ND	8.9 (J)	ND	ND	ND	ND	8.3	0.31	ND	NR
Average	6.00	26.97	0.02	1.27	34.77	0.05	12.77	0.51	0.00	NR
UPR-100-N-9 & UPR-100-N-4										
0.0 - 6.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
6.0 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
>15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Average	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
120-N-1	Percolation Pond									
0.0 - 6.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
6.0 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
>15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Average	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
120-N-2	Surface Impoundment									
0.0 - 6.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
6.0 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
>15	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
Average	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
UPR-100-N-4 & UPR-100-N-8										
0.0 - 6.0	9.7	31.0	0.039 (J)	1.5	7.0	0.064 (B)	13.0	0.652	2.4	NR
6.0 - 15.0	ND	21.0	ND	ND	0.098	ND	17.0	0.54	ND	NR
>15	11.0	38.0	ND	ND	ND	ND	9.4	0.39	8.0	NR
Average	6.90	30.00	0.01	0.50	2.37	0.02	13.13	0.53	3.47	NR
116-N-1										
0.0 - 6.0	7.2 (J)	12.0 (J) - 18.0	0.024 (J)	ND	ND	ND	9.4 - 11.0	0.34 - 0.35	ND	0.44 (J) - 1.0
6.0 - 15.0	ND	37.0	ND	ND	ND	ND	9.4	0.49	ND	ND
>15	ND	430.0 - 690.0	ND	ND	0.5 - 2.0	ND	13.0 - 14.0	0.35 - 0.46	190.0 - 320.0	0.43 (J)
Average	2.40	204.00	0.01	0.00	0.84	0.00	11.03	0.41	85.00	0.38

Summary of Investigation for Operable Unit 100-NR-1 - Radionuclide Constituents

Site Identification with depth (ft) of sample collection	Thorium 228 (pCi/g)	Thorium 232 (pCi/g)	Uranium 233/234 (pCi/g)	Uranium 238 (pCi/g)	Comments
116-N-2	Chemical Waste Storage Tank				
0.0 - 6.0	1.2	0.84	0.65	0.56	
6.0 - 15.0	1.0	1.1	0.46	0.59	
>15	0.51	0.47	0.48	0.33	
Average	0.90	0.80	0.53	0.49	
UPR-100-N-9 & UPR-100-N-4					
0.0 - 6.0	NS	NS	NS	NS	
6.0 - 15.0	NS	NS	NS	NS	
>15	NS	NS	NS	NS	
Average	NS	NS	NS	NS	
120-N-1	Percolation Pond				
0.0 - 6.0	NS	NS	NS	NS	
6.0 - 15.0	NS	NS	NS	NS	
>15	NS	NS	NS	NS	
Average	NS	NS	NS	NS	
120-N-2	Surface Impoundment				
0.0 - 6.0	NS	NS	NS	NS	
6.0 - 15.0	NS	NS	NS	NS	
>15	NS	NS	NS	NS	
Average	NS	NS	NS	NS	
UPR-100-N-4 & UPR-100-N-8					
0.0 - 6.0	1.0	0.95	0.64	0.73	
6.0 - 15.0	1.2	0.9	0.37	0.35	
>15	0.54	0.49	0.29 (J)	0.29 (J)	
Average	0.91	0.78	0.43	0.46	
116-N-1					
0.0 - 6.0	0.62 - 0.70	0.52 - 0.69	NR	0.55 - 0.82	
6.0 - 15.0	0.67	0.72	NR	0.73	
>15	0.59 - 0.63	0.62 - 0.67	0.69 - 1.2	0.47 - 0.61	
Average	0.65	0.66	0.95	0.65	

Summary of Investigation for Operable Unit 100-NR-1 - Radionuclide Constituents

Site Identification with depth (ft) of sample collection	Gross Alpha (pCi/g)	Gross Beta (pCi/g)	Americium 241 (pCi/g)	Cesium 137 (pCi/g)	Cobalt 60 (pCi/g)	Plutonium 239/240 (pCi/g)	Potassium 40 (pCi/g)	Radium 226 (pCi/g)	Strontium 90 (pCi/g)	Technetium 99 (pCi/g)
UPR-100-N-17										
0.0 - 6.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
6.0 - 15.0	NS	NS	NS	NS	NS	NS	NS	NS	NS	NS
>15	7.9 (J)	18.0	ND	ND	1.3	ND	16.0	0.49	1.1 (J)	NR
Average	7.9	18.0	0.0	0.0	1.3	0.0	16.0	0.49	1.1	NS

Summary of Investigation for Operable Unit 100-NR-1 - Radionuclide Constituents

Site Identification with depth (ft) of sample collection	Thorium 228 (pCi/g)	Thorium 232 (pCi/g)	Uranium 233/234 (pCi/g)	Uranium 238 (pCi/g)	Comments
UPR-100-N-17					
0.0 - 6.0	NS	NS	NS	NS	
6.0 - 15.0	NS	NS	NS	NS	
>15	1.1	1.2	0.55	0.5	
Average	1.1	1.2	0.55	0.50	

Summary of Investigation for 300-FF-1 Operable Unit - Radionuclide Constituents

Site Identification with depth (ft) of sample collection	Gross Alpha Scan (pCi/g)	Gross Beta Scan (pCi/g)	Cesium-137 Gamma Scan (pCi/g)	Cobalt-60 Gamma Scan (pCi/g)	Chromium-51 Gamma Scan (pCi/g)	Potassium-40 Gamma Scan (pCi/g)	Radium-226 Gamma Scan (pCi/g)
316-1	South Process Pond						
0.0 - 2.5	8.0 - 1786.0	11.0 - 1430.0	0.048 (UJ) - 0.628 (J)	0.054 (UJ) - 80.97 (J)	1.527 (U) - 8.519 (U)	3.68 - 8.82	0.264 (J) - 0.387 (J)
2.5 - 5.0	1.0 - 166.0	11.0 - 126.0	0.030 (UJ) - 0.43 (J)	0.041 (UJ) - 20.29 (J)	1.040 (U) - 3.435 (U)	6.318 - 8.783	0.256 - 0.44 (J)
5.0 - 10.0	6.0 (UJ) - 22.0	11.0 - 56.0	0.035 (UJ) - 0.27 (J)	0.051 (UJ) - 6.139	1.246 (U) - 2.167 (U)	6.991 - 9.104	0.283 - 0.392
10.0 - 15.0	2.0 (U) - 16.0	9.0 (UJ) - 17.0	0.034 (UJ) - 0.049 (UJ)	0.036 (UJ) - 0.154 (J)	1.033 (U) - 1.280 (U)	7.123 - 9.192	0.278 (J) - 0.344
15.0 - 20.0	4.0 - 77.0 (J)	16.0 - 47.0	0.037 (UJ) - 0.069 (UJ)	0.056 (UJ) - 1.644	1.445 (U) - 2.618 (U)	8.411 - 10.22	0.28 - 0.426 (J)
20.0 - 25.0	6.0 - 10.0	14.0 - 24.0	0.038 (UJ) - 0.071 (UJ)	0.063 - 0.405 (J)	1.245 (U) - 1.891 (U)	7.86 - 9.161	0.329 - 0.433
25.0 - 30.0	2.0 - 20.0	11.0 - 29.0	0.051 (UJ) - 0.074 (U)	0.054 (UJ) - 0.441	1.723 (U) - 2.838 (U)	7.211 - 12.28	0.357 - 0.646
30.0 - 35.0	5.0 - 11.0	8.0 - 27.0	0.036 (UJ) - 0.054 (UJ)	0.056 - 0.114 (J)	1.281 (U) - 3.285 (U)	7.931 - 14.17	0.349 (J) - 0.453
35.0 - 40.0	2.0 - 18.0	8.0 - 22.0	0.036 (UJ) - 0.061 (UJ)	0.049 (U) - 0.957 (J)	1.256 (U) - 2.762 (U)	7.505 - 11.63	0.296 - 0.560
40.0 - 45.0	2.0 (U) - 11.0	12.0 - 15.0	0.029 (UJ) - 0.039 (UJ)	0.04 - 0.101 (J)	1.152 (U) - 1.407 (U)	7.622 - 8.55	0.35 - 0.359 (J)
Average	65.8	61.4	0.04	3.4	0.0	8.8	0.4
316-2	North Process Pond						
0.0 - 2.5	10.0 - 78.0	9.0 - 71.0	0.07 (U) - 0.689	0.069 (U) - 1.211	5.569 (U) - 65.03 (U)	2.569 - 7.829	0.310 - 1.89
2.5 - 5.0	5.0 - 942.0	9.0 - 1069.0	0.079 (U) - 37.52	0.1 (UJ) - 3.518	4.136 (U) - 45.0 (U)	3.755 - 7.958	0.273 - 2.057
5.0 - 10.0	3.0 - 52.0	6.0 - 54.0	0.062 - 0.187 (UJ)	0.085 (UJ) - 0.402	4.294 (U) - 9.90 (U)	5.901 - 9.326	0.327 - 0.430
10.0 - 15.0	1.0 - 160.0	12.0 - 79.0	0.085 (U) - 0.118 (J)	0.1 (UJ) - 0.315	1.870 (U) - 7.623 (U)	6.302 - 10.9	0.308 (J) - 0.49
15.0 - 20.0	10.0 - 40.0	16.0 - 26.0	0.051 (UJ) - 0.099 (U)	0.101 (U) - 0.28	1.892 (U) - 26.38 (U)	6.718 - 10.54	0.320 (J) - 0.502
20.0 - 25.0	3.0 - 20.0	14.0 - 21.0	0.052 (UJ) - 0.119 (UJ)	0.12 (UJ) - 0.258	5.742 (U) - 22.17 (U)	6.952 - 8.133	0.356 - 0.465
25.0 - 30.0	8.0 - 23.0	20.0 - 42.0	0.08 (U) - 0.112 (UJ)	0.097 (J) - 0.192 (UJ)	1.969 (U) - 27.08 (U)	7.150 - 8.883	0.327 - 0.489
30.0 - 35.0	5.0 - 22.0	10.0 - 25.0	0.05 (UJ) - 0.093 (U)	0.058 (UJ) - 0.137 (J)	2.262 (UJ) - 22.98 (U)	7.387 - 10.67	0.303 - 0.497
Average	61.8	64.6	1.4	0.3	0.0	7.9	0.5
316-5	Process Trenches (Data from East Trench Post-ERA)						
0.0 - 2.5	3.21 (UJ) - 7.26	9.3 (J) - 15.6 (J)	0.021 (UJ) - 0.698	0.0 (UJ) - 0.322	NR	NR	0.237 (J) - 0.349 (J)
316-5	Process Trenches (Test Pit Data from West Trench)						
0.0 - 2.5	98.2 - 165.00	73.3 - 120.0	0.907 - 1.212	0.1 (UJ) - 0.14 (J)	NR	NR	0.317 - 0.372
2.5 - 5.0	188.0	119.0	1.465	0.036 (UJ)	NR	NR	0.362
5.0 - 10.0	20.1	30.2	3.612 (UJ)	4.242 (UJ)	NR	NR	1.572
10.0 - 15.0	19.6	19.6	0.020 (UJ)	0.045 (UJ)	NR	NR	0.369
15.0 - 20.0	71.5	34.4	0.445	0.056 (UJ)	NR	NR	0.377
Average	60.6	44.1	0.4	0.03	NR	NR	0.6

Summary of Investigation for 300-FF-1 Operable Unit - Radionuclide Constituents

Site Identification with depth (ft) of sample collection	Strontium 90 (pCi/g)	Thorium-228 Gamma Scan (pCi/g)	Thorium-232 Gamma Scan (pCi/g)	Uranium 234 (pCi/g)	Uranium-235 Gamma Scan (pCi/g)	Uranium 235 (pCi/g)	Uranium-238 Gamma Scan (pCi/g)
316-1	South Process Pond						
0.0 - 2.5	0.06 (U) - 0.6 (J)	0.55 - 1.163 (J)	0.458 - 1.976 (J)	0.8 - 1230.0	0.72 - 39.3	0.04 (J) - 75.0	20.45 - 805.2
2.5 - 5.0	0.0 (NU) - 0.8	0.36 - 0.624 (J)	0.395 - 1.004 (J)	0.1 - 46.0 (J)	0.212 - 1.185	0.05 (J) - 0.8 (J)	35.42
5.0 - 10.0	0.0 (NUJ) - 3.0 (U)	0.415 (J) - 0.8	0.371 - 0.76	1.0 - 40.0	1.8	0.06 (J) - 2.0 (J)	9.676 - 29.97
10.0 - 15.0	0.0 (U) - 3.0 (J)	0.4 - 0.679	0.459 - 0.629 (J)	0.6 - 8.9 (J)	0.29 - 1.1	0.07 (J) - 0.8 (J)	NR
15.0 - 20.0	0.0 (NU) - 1.0 (U)	0.515 (J) - 0.738	0.447 - 0.634	1.0 - 32.2 (J)	0.589	0.07 (J) - 2.0 (J)	11.390
20.0 - 25.0	0.0 (U) - 0.004	0.092 (U) - 0.635	0.37 (J) - 0.608	1.3 (J) - 3.2	NR	0.08 (J) - 0.3 (J)	NR
25.0 - 30.0	0.0 (NU) - 1.0 (U)	0.612 - 0.899	0.575 - 0.669	1.0 - 8.5 (J)	0.227	0.1 (J) - 0.9 (J)	NR
30.0 - 35.0	0.0 (NU) - 1.0 (U)	0.476 - 1.205	0.48 (J) - 1.029	0.9 - 3.6 (J)	NR	0.09 (J) - 0.3 (J)	NR
35.0 - 40.0	0.0 (NU) - 1.0 (U)	0.414 (J) - 0.862	0.39 (J) - 0.900	1.7 (J) - 3.4 (J)	NR	0.09 (J) - 0.4 (J)	NR
40.0 - 45.0	0.0 (NUJ) - 0.05 (U)	0.493 - 0.585 (J)	0.411 - 0.450 (J)	0.9 (J) - 1.0 (J)	7.2	0.05 (J) - 0.08 (J)	NR
Average	0.2	0.6	0.6	41.5	3.5	2.5	85.1
316-2	North Process Pond						
0.0 - 2.5	0.0 (NU) - 0.9	0.499 - 2.184	0.573 - 1.634	1.0 - 55.0	0.867 - 2.285	0.1 (J) - 2.1	0.351 - 54.16
2.5 - 5.0	0.0 (NU) - 2.1	0.455 - 3.198	0.505 - 3.546	0.9 - 1100.0	20.46	0.04 (J) - 110.0	430.7
5.0 - 10.0	0.0 (NU) - 0.4	0.315 - 0.811	0.439 - 0.834	0.8 - 128.0	0.358 - 3.165	0.08 (J) - 2.5	12.52 - 72.19
10.0 - 15.0	0.0 (NU) - 0.8 (J)	0.481 - 0.753 (J)	0.334 - 0.852	1.2 - 52.0 (J)	0.635 - 1.414	0.09 (J) - 4.9 (J)	9.113 - 36.08
15.0 - 20.0	0.0 (NU) - 0.23 (UJ)	0.542 - 0.895	0.557 - 0.72	0.8 - 14.7	0.344 - 0.585	0.04 - 1.5	10.84
20.0 - 25.0	0.0 (NU) - 0.006	0.588 - 0.827	0.481 - 0.511	1.0 - 16.3	0.464	0.2 - 1.6	11.14
25.0 - 30.0	0.0 (NU) - 0.1 (U)	0.489 - 0.652 (J)	0.432 - 1.008	1.6 - 24.5	0.19 - 0.594	0.1 - 2.4	7.81 - 11.13
30.0 - 35.0	0.0 (NU) - 2.0	0.609 - 0.921 (J)	0.567 - 0.996	1.4 - 10.5	NR	0.1 - 1.0	NR
Average	0.3	0.8	0.8	59.4	2.5	5.0	54.2
316-5	Process Trenches (Data from East Trench Post-ERA)						
0.0 - 2.5	0.0 (NU) - 0.407 (UJ)	0.334 (J) - 0.444 (J)	0.267 - 0.483	3.5 (R) - 8.45 (R)	NR	0.37 (R) - 1.11 (R)	NR
316-5	Process Trenches (Test Pit Data from West Trench)						
0.0 - 2.5	0.088 (U) - 0.213 (U)	0.413 - 0.477	0.383 - 0.699	44.9 (R) - 59.69 (R)	NR	3.93 (R) - 6.10 (R)	NR
2.5 - 5.0	0.016 (U)	0.690	0.738	59.17 (R)	NR	7.73 (R)	NR
5.0 - 10.0	0.0 (NU)	0.829	1.632 (UJ)	16.86 (R)	NR	3.05 (R)	NR
10.0 - 15.0	0.9	0.08 (UJ)	0.447	16.06 (R)	NR	2.16 (R)	NR
15.0 - 20.0	0.184 (UJ)	0.431	0.601	26.27 (R)	NR	3.56 (R)	NR
Average	0.2	0.5	0.4	26.2	NR	3.4	NR

Summary of Investigation for 300-FF-1 Operable Unit - Radionuclide Constituents

Site Identification with depth (ft) of sample collection	Uranium 238 (pCi/g)	Total Uranium (pCi/g)	Comments
316-1	South Process Pond		
0.0 - 2.5	0.7 - 980.0	NR	
2.5 - 5.0	0.8 - 43.0 (J)	NR	
5.0 - 10.0	0.6 - 36.0	NR	
10.0 - 15.0	0.6 - 7.2 (J)	NR	
15.0 - 20.0	1.0 - 26.2 (J)	NR	
20.0 - 25.0	1.2 (J) - 2.7	NR	
25.0 - 30.0	1.1 - 6.8 (J)	NR	
30.0 - 35.0	0.8 - 2.9 (J)	NR	
35.0 - 40.0	0.8 - 3.1	NR	
40.0 - 45.0	1.0 (J) - 1.1 (J)	NR	
Average	33.6	NR	
316-2	North Process Pond		
0.0 - 2.5	0.9 - 49.0	NR	
2.5 - 5.0	0.7 - 900.0	NR	
5.0 - 10.0	0.7 - 116.0	NR	
10.0 - 15.0	1.1 - 43.0	NR	
15.0 - 20.0	0.9 - 12.4	NR	
20.0 - 25.0	1.0 - 13.6	NR	
25.0 - 30.0	1.4 - 20.4	NR	
30.0 - 35.0	1.2 - 9.4	NR	
Average	49.7	NR	
316-5	Process Trenches (Data from East Trench Post-ERA)		
0.0 - 2.5	2.49 (R) - 5.98 (R)	29.0 (UJ) - 33.0 (UJ)	
316-5	Process Trenches (Test Pit Data from West Trench)		
0.0 - 2.5	32.34 (R) - 44.06 (R)	80.0 (JR)	
2.5 - 5.0	43.51 (R)	NR	
5.0 - 10.0	12.03 (R)	NR	
10.0 - 15.0	11.26 (R)	NR	
15.0 - 20.0	18.62 (R)	NR	
Average	18.9	8.9	

Summary of Investigation for 300-FF-1 Operable Unit - Radionuclide Constituents

Site Identification with depth (ft) of sample collection	Gross Alpha Scan (pCi/g)	Gross Beta Scan (pCi/g)	Cesium-137 Gamma Scan (pCi/g)	Cobalt-60 Gamma Scan (pCi/g)	Chromium-51 Gamma Scan (pCi/g)	Potassium-40 Gamma Scan (pCi/g)	Radium-226 Gamma Scan (pCi/g)
	North Sanitary Sewer System						
	Ash Pits						
	Retired Filter Backwash Pond (Infiltration Basin of South Process Pond)						
	Filter Backwash Pond						
618-4	Burial Ground No. 4						
0.0 - 2.5	4.0 - 655.0	14.0 - 1395.0	0.081 (J) - 1.578 (J)	0.095 (UJ) - 0.394 (UJ)	1.803 (U) - 10.34 (U)	4.028 - 11.5	0.382 - 0.437
2.5 - 5.0	182.0	255.0	0.148 (UJ)	0.135 (UJ)	3.409 (U)	8.922	0.465
5.0 - 10.0	10.0 - 479.0	14.0 - 984.0	0.098 (UJ) - 0.623 (J)	0.120 (UJ) - 0.342 (UJ)	2.416 (U) - 10.92 (U)	4.665 - 9.973	0.329 (U) - 0.415
10.0 - 15.0	73.0	91.0	0.177 (UJ)	0.098 (UJ)	2.228 (U)	7.117	0.300
15.0 - 20.0	6.0	9.0	0.098 (UJ)	0.100 (UJ)	1.818 (U)	8.084	0.374
20.0 - 25.0	12.0	27.0	0.096 (UJ)	0.107 (UJ)	2.211 (U)	6.966	0.271
Average	118.3	221.2	0.1	0.0	0.0	7.6	0.3
618-5	Burial Ground No. 5						
0.0 - 2.5	1.0 - 35.0 (J)	14.0 - 48.0 (J)	0.089 (UJ) - 0.140 (UJ)	0.077 (UJ) - 0.147 (UJ)	3.044 (U) - 4.758 (U)	9.61 - 13.09	0.286 (J) - 1.395 (J)
2.5 - 5.0	NS	NS	NS	NS	NS	NS	NS
5.0 - 10.0	0.0 (U) - 3.0 (UJ)	12.0 (J) - 13.0	0.064 (UJ) - 0.124 (UJ)	0.099 (UJ) - 0.106 (UJ)	2.304 (U) - 3.465	6.854 - 9.205	0.37 (J) - 0.514
10.0 - 15.0	3.0 (UJ)	15.0 (J)	0.148 (UJ)	0.143 (UJ)	3.388 (U)	9.516	0.486
15.0 - 20.0	20.0	45.0	0.088 (UJ)	0.097 (UJ)	2.218 (U)	10.480	0.460
20.0 - 25.0	7.0 (J)	15.0 (J)	0.082 (UJ)	0.081 (UJ)	2.161 (U)	8.911	0.529
25.0 - 30.0	15.0 (J)	35.0 (J)	0.076 (UJ)	0.113 (UJ)	2.528 (U)	9.597	0.639
Average	9.3	25.1	0.0	0.0	0.3	9.5	0.5
618-12	North Process Pond Scraping Disposal Area						
	322 Hazardous Waste Staging Area						

Summary of Investigation for 300-FF-1 Operable Unit - Radionuclide Constituents

Site Identification with depth (ft) of sample collection	Strontium 90 (pCi/g)	Thorium-228 Gamma Scan (pCi/g)	Thorium-232 Gamma Scan (pCi/g)	Uranium 234 (pCi/g)	Uranium-235 Gamma Scan (pCi/g)	Uranium 235 (pCi/g)	Uranium-238 Gamma Scan (pCi/g)
	North Sanitary Sewer System						
	Ash Pits						
	Retired Filter Backwash Pond (Infiltration Basin of South Process Pond)						
	Filter Backwash Pond						
618-4	Burial Ground No. 4						
0.0 - 2.5	0.04 (UJ) - 5.4 (J)	0.472 - 0.787	0.501 (J) - 0.541 (J)	0.4 - 1064.0	0.03 (J) - 54.79 (J)	0.03 (J) - 0.04 (J)	1308.0
2.5 - 5.0	0.60 (J)	0.689	0.736 (J)	2100.0	6.281	37.0	155.8
5.0 - 10.0	0.0 (NUJ)	0.419 - 2.25	0.403 (J) - 1.944 (J)	2.9 - 723.3	0.20 (J) - 41.05 (J)	0.02 (J) - 1.4 (J)	3.5 - 1050.0
10.0 - 15.0	0.0 (NUJ)	0.394	0.547 (J)	107.0	3.160	4.8 (J)	94.87
15.0 - 20.0	0.0 (NUJ)	0.489	0.600 (J)	0.6 - 2100.0	NR	0.06 (J)	NR
20.0 - 25.0	0.10 (UJ)	0.640	0.604 (J)	13.0	NR	0.5 (J)	NR
Average	0.3	0.7	0.7	359.9	13.5	4.9	451.2
618-5	Burial Ground No. 5						
0.0 - 2.5	0.0 (NU) - 0.7 (J)	0.514 - 1.145	0.711 - 0.964	0.6 - 3.1	0.772	0.03 - 1.3 (J)	12.0 - 37.0
2.5 - 5.0	NS	NS	NS	NS	NS	NS	NS
5.0 - 10.0	0.0 (U) - 0.2 (UJ)	0.443 - 0.781 (J)	0.472 - 0.694	0.8 - 1.4	NR	0.04 (J) - 0.08	NR
10.0 - 15.0	0.6 (J)	0.625	0.725	0.7	NR	0.02	NR
15.0 - 20.0	0.3 (UJ)	0.733 (J)	0.874	24.0	1.41	1.2	31.99
20.0 - 25.0	0.0 (NUJ)	0.543	0.393	3.0	NR	0.2	NR
25.0 - 30.0	0.03	0.532	0.757 (U)	16.0	0.845	0.7	11.66
Average	0.1	0.6	0.5	8.3	1.1	0.5	22.4
618-12	North Process Pond Scraping Disposal Area						
	322 Hazardous Waste Staging Area						

Summary of Investigation for 300-FF-1 Operable Unit - Radionuclide Constituents

Site Identification with depth (ft) of sample collection	Uranium 238 (pCi/g)	Total Uranium (pCi/g)	Comments
	North Sanitary Sewer System		No LFI Investigation
	Ash Pits		No LFI Investigation
	Retired Filter Backwash Pond (Infiltration Basin of South Process Pond)		No LFI Investigation
	Filter Backwash Pond		No LFI Investigation
618-4	Burial Ground No. 4		
0.0 - 2.5	0.5 - 0.9	NR	
2.5 - 5.0	2100.0	NR	
5.0 - 10.0	3.5 - 640.0	NR	
10.0 - 15.0	112.0	NR	
15.0 - 20.0	0.7	NR	
20.0 - 25.0	13.0	NR	
Average	299.6	NR	
618-5	Burial Ground No. 5		
0.0 - 2.5	0.7 - 29.0	NR	
2.5 - 5.0	NR	NS	
5.0 - 10.0	0.8 - 1.4	NR	
10.0 - 15.0	0.7	NR	
15.0 - 20.0	24.0	NR	
20.0 - 25.0	3.0	NR	
25.0 - 30.0	16.0	NR	
Average	9.5	NR	
618-12	North Process Pond Scraping Disposal Area		No LFI Investigation
	322 Hazardous Waste Staging Area		No LFI Investigation

APPENDIX C

EXPLANATION OF VOLUME CALCULATIONS FOR ENVIRONMENTAL RESTORATION WASTE SITES

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The basic calculations for the total contaminated and total excavated volumes include estimating the volumes for parallelepipeds, cubes, cylinders, and trapezoids, which were added together as needed, to calculate the volumes at each waste site. Whenever possible, the volume calculations were reduced to the simplest form in the models. The following symbols are used in the formulas for all three models:

x_1 = Width of the disposal cell
x_2 = Maximum width of the waste plume ($x_1 * 2 * m$)
y_1 = Length of the disposal cell
y_2 = Maximum length of the waste plume ($y_1 * 2 * m$)
z_1 = Depth of the disposal cell
z_2 = Depth of the waste plume beneath of the disposal cell
z_3 = Depth of the overburden or the depth below grade to the top of the disposal cell.
Z = Maximum depth of excavation ($z_1 + z_2 + z_3$)
X = Maximum top excavation width ($x_2 + 2 * m * Z$)
Y = Maximum top excavation length ($y_2 + 2 * m * Z$)
m = Horizontal to vertical (H:V) slope of waste plume or excavation (1.5) unless stated otherwise

Type 1 Model - This model includes waste sites which have a disposal cell and a contaminated plume beneath the disposal cell. The total waste volume equals the disposal cell volume ($x_1 * y_1 * z_1$) and the waste plume trapezoidal volume ($1/6 * z_2 * (y_2 * x_2 + (y_2 + y_1) * (x_2 + x_1) + y_1 * x_1)$. See Figure D-1 for the type 1 model diagram and specific waste site example.

The total excavated volume is determined by a excavation slope of 1.5 H:V. The maximum length and width at the surface of the waste site is based on a relationship between the slope factor and the maximum depth and the maximum length and width of the waste plume ($1/6 * Z * (y_2 * x_2 + (y_2 + Y) * (x_2 + X) + Y * X)$.

Model Type 2 - This model type includes all open liquid disposal units with earthen sloped sides and assumes lateral dispersion. Since the side slope of the waste unit is inclined, lateral dispersion is modeled as a vertical line from the maximum unit fill point to the bottom of the waste plume. This model type requires four lines on the waste volume spreadsheet to calculate the waste volume, the total volume, the different types of overburden or void space, and a total line.

The waste volume is determined in line 1 in the spreadsheet determined by calculating two parallelepiped volumes for the contaminated soil. The clean fill or void space are removed from the total volumes by subtracting a trapezoidal volume for these volumes. See Figure D-2 for the type 2 model diagram and specific waste site example.

The formula for calculating the contaminated volume is $[(y_2 * x_2 * z_1) + (y_2 * x_2 * z_2) - (1/6 * z_2) * (y_2 * x_2 + (y_2 + y_1) * (x_1 + x_2) + y_1 * x_1]$, where y_2 and x_2 are the distances across the top at the highest liquid contact point and also represent the maximum lateral extent of the waste plume, and x_2 and y_2 are the distances at the base of the trench, and z_2 is the depth of the disposal cell from its base to the maximum fill point.

Line 2 calculates the total volume. The maximum length and width at the waste plume bottom is obtained from the waste volume line, in order to calculate the maximum

116-B-3 Crib, Waste Volume Example

Type 1 Model Example

Total Volume Calculations:

Center Column: TVCC

Height = $(z_1 + z_2 + z_3) = Z$
$(5 + 10 + 3) = 18$

Width = $(y_1 + 2a) = Y_1$
$(10 + 7.5 + 7.5) = 25$

Length = $(x_1 + 2a) = X_1$
$(10 + 7.5 + 7.5) = 25$

Volume = $(X \cdot Y \cdot Z)$
$18 \cdot 25 \cdot 25 = 11{,}250$

Prism Sides: TVPS

Volume [1] = $[x_1 \cdot Z \cdot (Z \cdot m)]$
$[25 \cdot 18 \cdot (18 \cdot m)] = 12{,}150$

Volume [2] = $[y_1 \cdot Z \cdot (Z \cdot m)]$
$[25 \cdot 18 \cdot (18 \cdot 1.5)] = 12{,}150$

Prism Corners: TVPC

Volume = $[(Z \cdot m) \cdot (Z \cdot m) \cdot Z] \cdot (4 + 3)$
$[(18 \cdot 1.5) \cdot (18 \cdot 1.5) \cdot 18] \cdot (4 + 3) = 17{,}496$

Total Vol: = $TVCC + TVPS_1 + TVPS_2 + TVPC$
$11{,}250 + 12{,}150 + 12{,}150 + 17{,}496 = \underline{53{,}046}$ or

Total Vol: = $1 \div 6 * Z * (L_b * W_b + (L_b + L_t) * (W_b + W_t) + L_t * W_t)$
= $1 \div 6 * 18 * (25 * 25 + (25 + 79) * (25 + 79) + 79 * 79)$
$1 \div 6 * 18 * (625 + 10{,}816 + 6{,}241)$
$1 \div 6 * 18 * 17{,}682 = \underline{53{,}046}$

Contaminated Soil: Assumes that the soil in the disposal cell is contaminated.

Disposal Cell: = $(x_1 \cdot y_1 \cdot z_1)$
$10 \cdot 10 \cdot 10 = 1000$

CSCC = $(x_1 \cdot y_1 \cdot z_2)$
$10 \cdot 10 \cdot 5 = 500$

$CSPS_1$ = $[x_1 \cdot z_2 \cdot (z_2 \cdot m)]$
$(5 \cdot 7.5 \cdot 10) = 375$

$CSPS_2$ = $[y_1 \cdot z_2 \cdot (z_2 \cdot 1.5)]$
$(5 \cdot 7.5 \cdot 10) = 375$

CSPC = $[(z_2 \cdot 1.5) \cdot (z_2 \cdot 1.5) \cdot z_2] \cdot (4 + 3)$
$(5 \cdot 7.5 \cdot 7.5) \cdot 4/3 = 375$

Total CS: = $DC + CSCC + CSPS_1 + CSPS_2 + CSPC$
$1{,}000 + 500 + 750 + 750 + 375 = \underline{2{,}625}$ or

CS: = $1 \div 6 * z_2 * (y_2 * x_2 + (y_1 + y_2) * (x_1 + x_2) + y_1 * x_1)$
$1 \div 6 * 5 * (25 * 25 + (10 + 25) * (25 + 10) + 10 * 10)$
$1 \div 6 * 5 * (625 + 1{,}225 + 100)$
$1 \div 6 * 5 * 1{,}950 = 1{,}625$

Total CS: = $DC + CS$
= $1{,}000 + 1{,}625 = \underline{2{,}625}$

Total Overburden:

Overburden = Total Volume + Ramp Volume - Contaminated Soil - Buried Waste
= $53{,}046 + 0 - 2{,}125 - 0 = \underline{50{,}921}$

X = Overall Waste Site Excavated Width, W_t

Y = Overall Waste Site Excavated Length, L_t

Z = Maximun Excavation Depth $(z_1 + z_2 + z_3)$, h

x_2 = Maximum Contaminated Width at Bottom of Excavation, W_b

y_2 = Maximum Contaminated Length at Bottom of Excavation, L_b

x_1 = Disposal Cell Width -- Given

y_1 = Disposal Cell Length -- Given

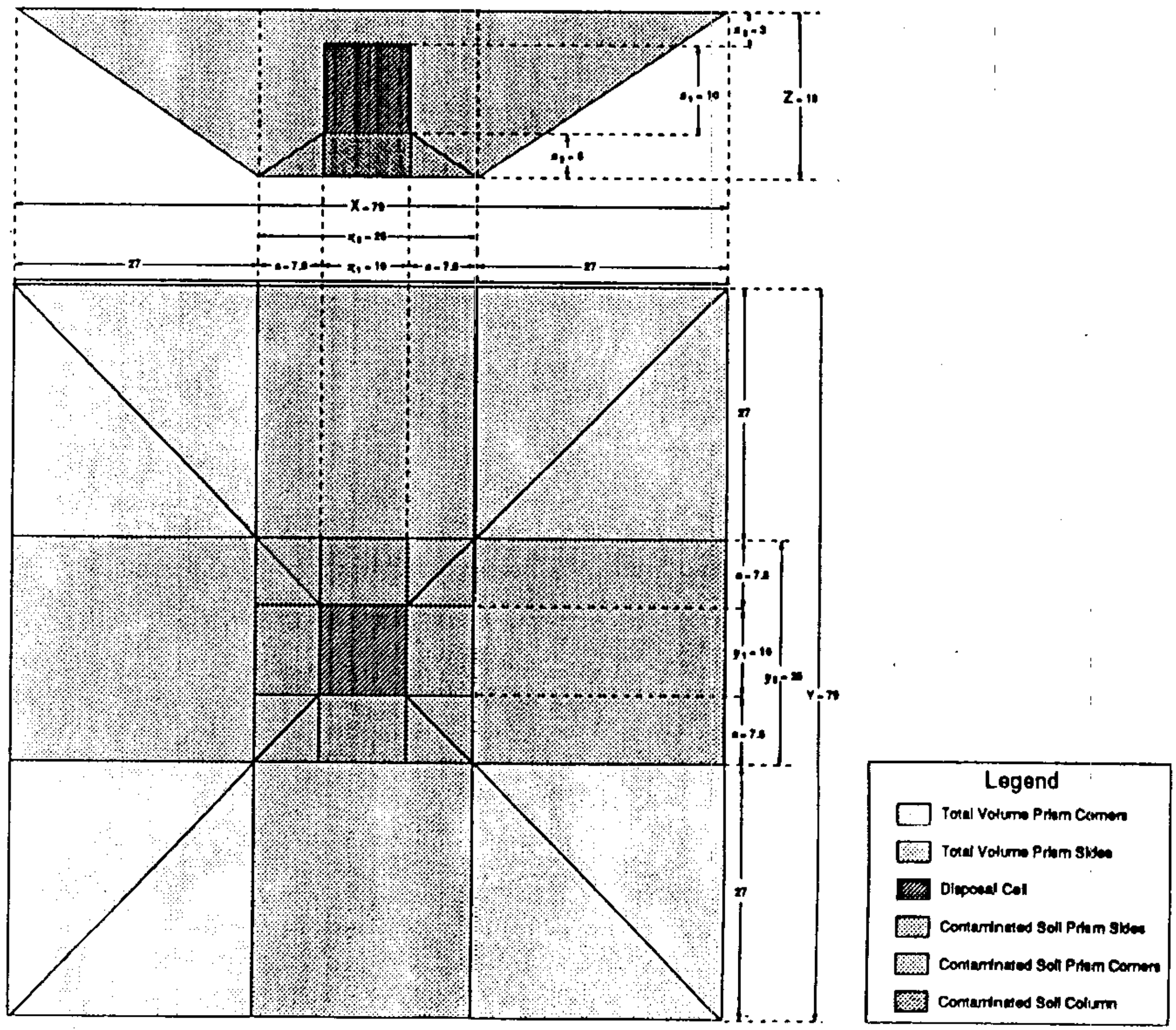
z_1 = Disposal Cell Depth -- Given

z_2 = Plume Depth below Disposal Column (Derived from 100-BC Waste Site Study

z_3 = Disposal Cell Overburden, Fill, or Etc. -- Given

a = Lateral Dispersion of Contaminated Soil $(z_2 \cdot m)$

m = Excavation [illegible]: 1.5 Horizontal/Verticle Unless Stated



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116-B-1 Trench, Waste Volume Example

Total Volume Calculations:

Center Column: TVCC

Height = $(a_1+a_2+a_3) = Z$
$(10 + 11 + 5) = 26$

Length = y_2 = 369

Width = x_2 = 44

Volume = $(x_2 \cdot y_2 \cdot Z)$
$44 \cdot 369 \cdot 26 = 422,136$

Prism Sides: TVPS

Volume ¹ = $[x_2 \cdot Z \cdot (Z \cdot m)]$
$[44 \cdot 26 \cdot (26 \cdot 1.5)] = 44,616$

Volume ² = $[y_2 \cdot Z \cdot (Z \cdot m)]$
$[369 \cdot 26 \cdot (26 \cdot 1.5)] = 374,166$

Prism Corners: TVPC

Volume = $[(Z \cdot m) \cdot (Z \cdot m) \cdot Z] \cdot (4 \div 3)$
$[(26 \cdot 1.5) \cdot (26 \cdot 1.5) \cdot 26] \cdot (4 \div 3) = 52,728$

Total Vol: = TVCC + TVPS₁ + TVPS₂ + TVPC
422,136 + 44,616 + 374,166 + 52,728 = <u>893,646</u>

or

Total Vol: = $1 \div 6 \cdot Z \cdot (L_b \cdot W_b + (L_b + L_t) \cdot (W_b + W_t) + L_t \cdot W_t)$
= $1 \div 6 \cdot 26 \cdot (369 \cdot 44 + (369 + 447) \cdot (44 + 122) + 447 \cdot 122)$
$1 \div 6 \cdot 26 \cdot (16,236 + 135,456 + 54,534)$
$1 \div 6 \cdot 26 \cdot 222,096 =$ <u>893,646</u>

Contaminated Soil: Assumes that the soil in the disposal cell is clean.

Disposal Cell: = $(x_2 \cdot y_2 \cdot a_1)$
$44 \cdot 369 \cdot 10$ = 162,360

CSCC = $(x_2 \cdot y_2 \cdot a_2)$
$44 \cdot 369 \cdot 11$ = 178,596

DCCF = $1 \div 6 \cdot a_1 \cdot (y_1 \cdot x_1 + (y_1 + y_2) \cdot (x_1 + x_2) + y_2 \cdot x_2)$
$1 \div 6 \cdot 10 \cdot (355 \cdot 30 + (355 + 369) \cdot (30 + 44) + 369 \cdot 44)$
$1 \div 6 \cdot 10 \cdot (10,650 + 53,576 + 16,236)$
$1 \div 6 \cdot 10 \cdot 80,462 = 134,103$

Total CS: = DC + CSCC - DCCF
162,360 + 178,596 - 134,103 = <u>206,853</u>

Total Overburden:

Total Volume + Ramp Volume - Contaminated Soil = Overburden
893,646 + 178,308 - 206,853 = <u>865,101</u>

X = Overall Waste Site Excavated Width, W_t

Y = Overall Waste Site Excavated Length, L_t

Z = Maximum Excavation Depth $(a_1 + a_2 + a_3)$, h

x_2 = Maximum Contaminated Width at Bottom of Excavation, W_b

y_2 = Maximum Contaminated Length at Bottom of Excavation, L_b

x_1 = Disposal Cell Width -- Given

y_1 = Disposal Cell Length -- Given

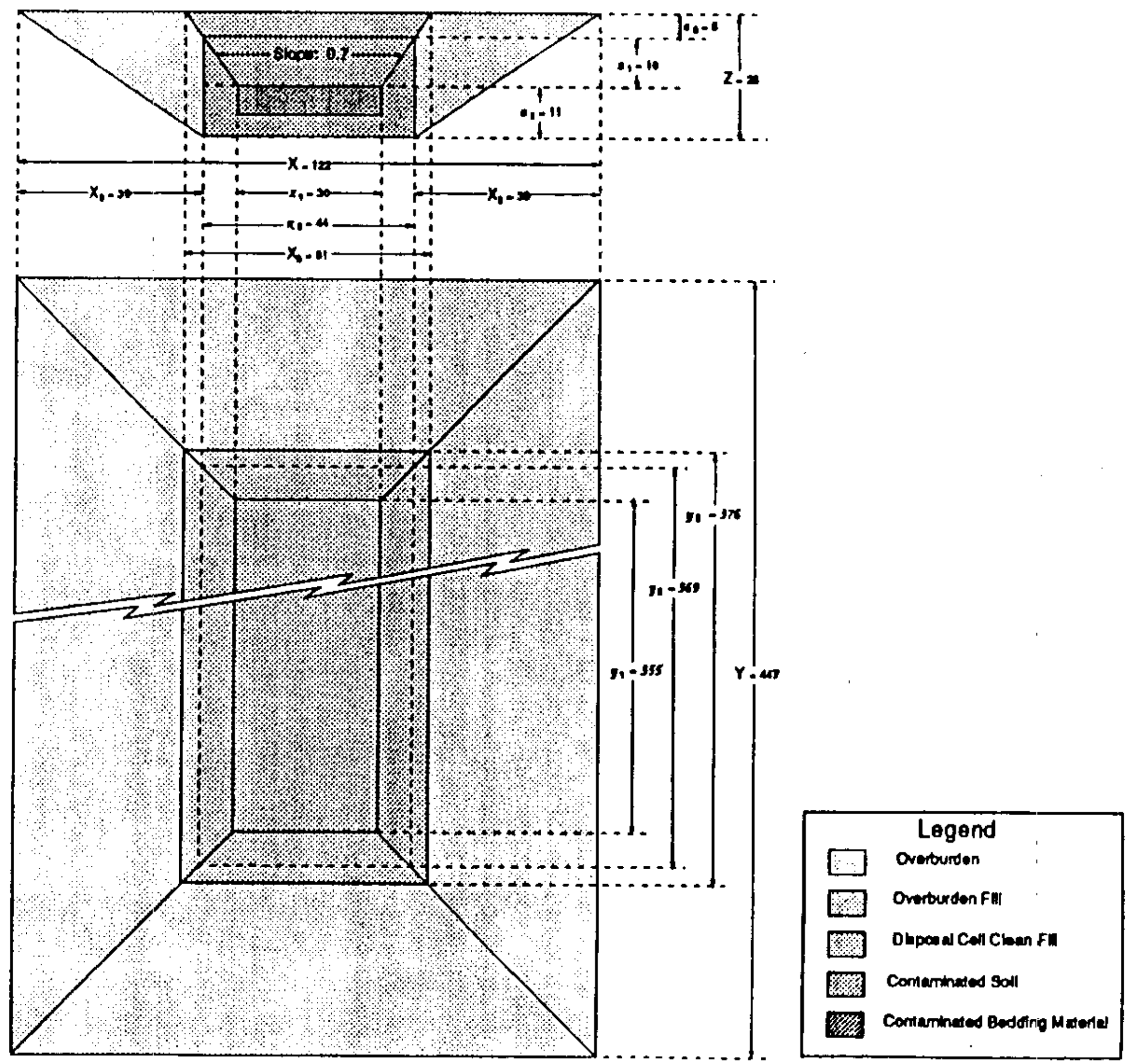
a_1 = Disposal Cell Depth -- Given

a_2 = Plume Depth below Disposal Column (Derived from 100-BC Waste Site Study

a_3 = Disposal Cell Overburden, Fill, or Etc. -- Given

m = Excavation Slope: 1.5 Horizontal/Verticle Unless Stated

Type 2 Model Example



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top excavation length and width. The formula for calculating the total volume is [1/6 * Z * (y_2 * x_2 + (y_2 + Y) * (x_2 + X) + Y * X)], where y_2 and x_2 are the maximum lateral extents of the waste plume beneath the unit. The symbols Y and X are the maximum excavation distances at the top of the waste site. The final step is estimating the total volumes is subtracting any trapezoidal void space in an open trench. Since most waste sites of this type have been backfilled with clean soil, this is done only when applicable. The calculations for void space volume requires determining new top dimensions for length and width. These dimensions are obtained by adding the length and width at the bottom of the disposal cell to [2 * m * (z_1+ z_3)], where m is the excavation slope, z_1 is the disposal cell depth, and z_3 is the distance to top of the disposal cell from grade level. These dimensions form a trapezoid which represents the void space.

Model Type 3 - This type of model was created to simulate and calculate waste site volumes for burial grounds, burning pits, demolished buildings, and other similar sites. The waste sites in this category are contained in a disposal cell with no contamination plume. The only exception is the laydown areas where it is assumed that the waste extends to a depth of 1 to 2 ft below grade. Like model type 2, this model type uses a minimum of four lines to calculate the contaminated waste volume, the total waste volume, the overburden volume, and waste site summary totals. Some waste sites consist of only one excavation where others may contain several parallel trenches. When estimating the contaminated volumes for the sites with multiple trenches, the total contaminated waste volume is calculated for one site, then multiplied by the number of trenches in the waste site. All of the soil contained within the disposal cell is considered contaminated.

In calculating the total excavated volume, a different set of dimensional criteria are used. The total outside boundary dimension and depth is utilized in calculating the total excavated volume. The final factor in determining the final volume is examining the volume of the mounds at the waste site. To determine total volume, the mound volume is added to the excavated volume. Total overburden is calculated on line 3 of the spreadsheet for each waste site.

The formula for calculating the total waste volume for each waste site takes into account that there are no contaminated plumes outside the disposal cell boundaries and also provides for multiple waste units within each waste site. In order to calculate the total waste volume, the following formula was used [1/6 * z_2 * (y_1 * x_1+ (y_1+ L_t) * (x_1+ W_t)+ L_t * W_t)], where y_1 and x_1 are the bottom dimensions of the disposal cell and L_t or W_t are the top dimensions based upon the side slope and total depth. The volume is multiplied by the number of units to obtain the total contaminated waste volume.

The formula for calculating the excavated volumes for model type 3 uses a different set of dimension from the contaminated volume. Due to multiple waste cells within waste sites the outside dimension of the waste site are used for the bottom dimension of the excavation. In order to calculate the total excavated volumes, the following formula was used [1/6 * Z* (y_2 * x_2 + (y_2 + Y) * (x_2 + X) + Y * X)], where y_2 and x_2 are the dimension at the bottom of the excavation, and X and Y are the maximum distances of the excavation at the top.

The mound over the burial site is calculated by the following formula [1/6 * z_3 * (L_b * Wb + (y_2+ L_b) * (x_2+ W_b)+ y_2 * x_2)], where y_2 and x_2 are the top dimensions of the mound, L_b or W_b are the bottom dimensions based upon the side slope and total depth.

and z_3 is the total thickness of the mound. Excavated volume and mound volume are added to calculate total volume.

See Figure D-3 for the type 3 model diagram and specific waste site example.

For some sites, additional volume was added to account for the access ramp excavation volumes. These volumes were added to the total excavated volume. This access ramp volumes are calculated by excavating a 10 percent access ramp to a point perpendicular with the waste site's longest bottom dimension. In most cases, the width of this ramp is 40 ft. After the ramp volume is calculated, the overlap from the excavation volume is deducted from the ramp volume. The formula for calculating the net ramp volume is $[(40 * Z * 10 * Z) - (40 * Z * 1.5 * Z)]$, where Z is the total depth, the 10 and 1.5 represent the slopes, and 40 is the constant width. In some cases the maximum waste site's y_2 and x_2 dimensions were less than 40 feet, in these cases the width of the ramp was less than 40 ft; the width of the ramp never exceeded 40 ft.

Some of the waste site in the 100 Area overlap; in order to account for this, the volume estimates include overlap overburden adjustments. When overlaps occurred, the volume was deducted from one of the affected waste site's total volume. There were no cases where contaminated soils overlapped, however, it is possible for the entire excavation of one waste site to be contained in the excavated volume from a second site. When this occurred, the contaminated volume for each site was listed with the respective sites, but the overlap volume was included in the larger waste site's excavated volume. This procedure maintains the waste classification and volume information associated with each source waste site, but prevents double counting excavated soil volumes.

118-B-1 Burial Ground Waste Volume Example & Model

Total Volume Calculations:

Exc. Vol. Type 1: $= 1 \div 6 \cdot h \cdot (L_b \cdot W_b + (L_b + L_t) \cdot (W_b + W_t) + L_t \cdot W_t)$
$= 1 \div 6 \cdot 20 \cdot (940 \cdot 270 + (940 + 1{,}000) \cdot (270 + 330) + 1{,}000 \cdot 330)$
$1 \div 6 \cdot 20 \cdot (253{,}800 + 1{,}164{,}000 + 330{,}000)$
$1 \div 6 \cdot 20 \cdot 1{,}747{,}800 = 5{,}826{,}000$

Total Overburden Type 1: $= 1 \div 6 \cdot z_2 \cdot (L_b \cdot W_b + (L_b + L_t) \cdot (W_b + W_t) + L_t \cdot W_t)$
$= 1 \div 6 \cdot 4 \cdot (992 \cdot 322 + (992 + 980) \cdot (322 + 310) + 980 \cdot 310)$
$1 \div 6 \cdot 4 \cdot (319{,}424 + 1{,}246{,}304 + 303{,}800)$
$1 \div 6 \cdot 4 \cdot 1{,}869{,}528 = 1{,}246{,}352$

Exc. Vol. Type 2: $= 1 \div 6 \cdot h \cdot (L_b \cdot W_b + (L_b + L_t) \cdot (W_b + W_t) + L_t \cdot W_t)$
$= 1 \div 6 \cdot 20 \cdot (160 \cdot 50 + (160 + 220) \cdot (50 + 110) + 220 \cdot 110)$
$1 \div 6 \cdot 20 \cdot (8{,}000 + 60{,}800 + 24{,}200)$
$1 \div 6 \cdot 20 \cdot 93{,}000 = 310{,}000$

Total Overburden Type 2: $= 1 \div 6 \cdot z_2 \cdot (L_b \cdot W_b + (L_b + L_t) \cdot (W_b + W_t) + L_t \cdot W_t)$
$= 1 \div 6 \cdot 4 \cdot (212 \cdot 102 + (212 + 200) \cdot (102 + 90) + 200 \cdot 90)$
$1 \div 6 \cdot 4 \cdot (21{,}624 + 79{,}104 + 18{,}000)$
$1 \div 6 \cdot 4 \cdot 118{,}728 = 79{,}152$

Total Excavated & Overburden Vol. $= \sum$ Total Excavated Volume and Overburden
$5{,}826{,}000 + 1{,}246{,}352 + 310{,}000 + 79{,}152 = \underline{7{,}461{,}504}$

Note: Total excavated and overburden colume is based upon the waste site's overall boundry dimensions. Contaminated soil volumes are based upon the individual burial trench dimensions.

Contaminated Soil: Assumes that the soil in the disposal cell is the same as the contaminated soil.

Unit CS, Type 1 $= 1 \div 6 \cdot z_1 \cdot (y_1 \cdot x_1 + (y_1 + L_t) \cdot (x_1 + W_t) + L_t \cdot W_t)$
$1 \div 6 \cdot 20 \cdot (223 \cdot 10 + (223 + 250) \cdot (10 + 37) + 250 \cdot 37)$
$1 \div 6 \cdot 20 \cdot (2{,}230 + 22{,}231 + 9{,}250)$
$1 \div 6 \cdot 20 \cdot 33{,}711 = 112{,}370$

Total CS, Type 1: = Unit CS, Type 1 · 21
$= 112{,}370 \cdot 21 = 2{,}359{,}770$ (IT Estimate 2,344,221)

Unit CS, Type 2: $= 1 \div 6 \cdot z_1 \cdot (y_1 \cdot x_1 + (y_1 + L_t) \cdot (x_1 + W_t) + L_t \cdot W_t)$
$1 \div 6 \cdot 8 \cdot (144 \cdot 0 + (144 + 160) \cdot (0 + 16) + 160 \cdot 16)$
$1 \div 6 \cdot 8 \cdot (0 + 4{,}864 + 2{,}560)$
$1 \div 6 \cdot 8 \cdot 7{,}424 = 9{,}898$

Total CS, Type 2: = Unit CS, Type 1 · 3
$= 9{,}898 \cdot 3 = 29{,}696$

Total Excavated & Overburden Vol. $= \sum$ Total CS Type 1 & 2
$2{,}359{,}770 + 29{,}696 = \underline{2{,}388{,}866}$

Total Overburden:

Total Volume + Ramp Volume - Contaminated Soil = Overburden
$7{,}593{,}024 + 178{,}308 - 2{,}388{,}866 = \underline{5{,}382{,}466}$

X = Overall Waste Site Excavated Width, W_t*

Y = Overall Waste Site Excavated Length, L_t*

Z = Maximun Excavation Depth $(a_1 + a_2)$, h

x_2 = Maximum Contaminated Width at Bottom of Excavation, W_b**

y_2 = Maximum Contaminated Length at Bottom of Excavation, L_b**

x_1 = Disposal Cell Width -- Given

y_1 = Disposal Cell Length -- Given

z_1 = Disposal Cell Depth -- Given

z_3 = Plume Depth below Disposal Column (Derived from 100-BC Waste Site Study

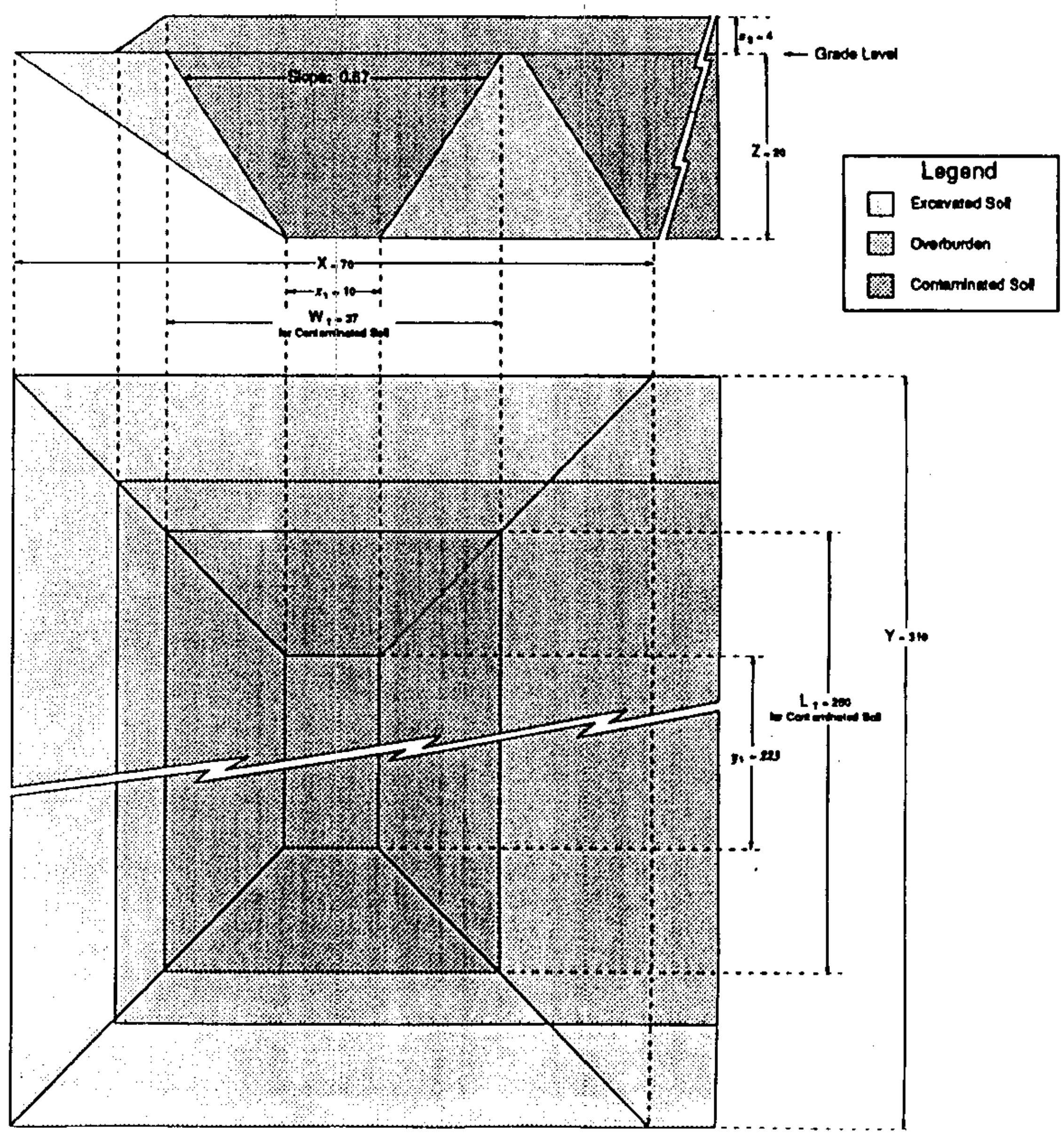
z_2 = Disposal Cell Overburden, Fill, or Etc. -- Given

m = Excavation Slope: 1.5 Horizontal/Vertical Unless Stated

* Values Vary for Contaminated vs Excavated Soil

** Not Applicable for Burial Ground Model

Type 3 Model Example



APPENDIX D

ENVIRONMENTAL RESTORATION VOLUME ESTIMATES

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100-BC Volumes

Site Name	OU	Model Type	Site Type / Category	Linear Distance	Number of Units in Waste Site	Disposal Cell Applicable	Structural Excavation and Waste Plume Dimensions: Y or L_t Top Excavation Length	y_2 or L_b Max Contam Length at Bottom	y_1 DC Length	X or W_t Top Excavation Width	x_2 or W_b Max Contam Width at Bottom	x_1 DC Width	Z Total Depth Below Grade*	z_1 DC Depth	z_3 Overburden Depth or OTBG	z_2 Plume Depth Below Waste Unit	m Waste Cell / Excavation Slope	a Lateral Plume Dispersion	Ramp Volume	Total Volume	Contaminated Waste Volume	Other Waste Volumes, See Remarks	Total Non Contaminated Soil	Demolition Waste Volume	Overlap Overburden or Other Adjustment	Remarks	Subproject Piping Data: Diameter	Length	Volume
132-B-1	BC1	3	Demolished Building - Contam. Soil		1	Yes	148	148	148	32	32	32	15	12	3	0	0.0	0			71,040			9,946		No probable waste volume			
132-B-1	BC1	3	Demolished Building Exv. Soil		1	Yes	193	144	146	77	32	32	15	12	3	0	1.5	0		141,815									
132-B-1	BC1	3	Demolished Building Overburden		1	Yes	148	157	0	32	41	0	3		3		1.5	0		16,719									
132-B-1	BC1	3	Demolished Building Total																	158,634	71,040	0	87,594	9,946					
132-B-4	BC1	3	Demolished Building - Contam. Soil		1	Yes	59	59	59	39	39	39	27	24	3	0	0.0	0			62,127			8,698		No probable waste volume			
132-B-4	BC1	3	Demolished Building Exv. Soil	82	1	Yes	140	59	59	120	39	39	27	24	3	0	1.5	0		228,339					88,253	Overburden Removed by 118-B-5			
132-B-4	BC1	3	Demolished Building Overburden		1	Yes	59	88	0	39	44	0	3		3		1.5	0		8,307									
132-B-4	BC1	3	Demolished Building Total																	236,646	62,127	0	86,26[illegible]	8,698	88,253				
132-B-5	BC1	3	Demolished Building - Contam. Soil		1	Yes	166	166	166	85	85	85	14	11	3	0	0.0	0			199,920			27,960		No probable waste volume			
132-B-5	BC1	3	Demolished Building Exv. Soil		1	Yes	210	166	166	127	85	85	14	11	3	0	1.5	0		282,534									
132-B-5	BC1	3	Demolished Building Overburden		1	Yes	166	177	0	85	94	0	3		3		1.5	0		46,337									
132-B-5	BC1	3	Demolished Building Total																	328,871	199,920	0	128,951	27,960					
132-C-3	BC1	3	Demolished Building - Contam. Soil		1	Yes	59	59	59	39	39	39	27	24	3	0	0.0	0			62,127			8,698		No probable waste volume			
132-C-3	BC1	3	Demolished Building Exv. Soil		1	Yes	140	59	59	120	39	39	27	24	3	0	1.5	0		228,339									
132-C-3	BC1	3	Demolished Building Overburden		1	Yes	59	88	0	39	44	0	3		3		1.5	0		8,307									
132-C-3	BC1	3	Demolished Building Total																	236,646	62,127	0	174,513	8,698					
			Category Average and/or Subtotal						106.50			48.75		17.75	3.00	0.00				960,797	395,214	0	477,339	55,330	88,253				
116-B-1	BC2	3	Burial Ground Type 1 Trench		21	No	250	223	223	37	10	10	20	20		0	0.67	0			2,344,476			328,787					
116-B-1	BC2	3	Burial Ground Type 1 Exv. Soil		1	No	1000	840	840	330	270	270	20	20		0	1.5	0	2,943	5,828,943									
116-B-1	BC2	3	Burial Ground Type 1 Overbdn		1	No	880	892		310	322		4		4	0	1.5	0		1,248,352									
116-B-1	BC2	3	Burial Ground Type 2 Trench		3	No	160	144	144	16	0	0	8	8		0	1.0	0			29,696			4,157					
116-B-1	BC2	3	Burial Ground Type 2 Exv. Soil		1	No	220	160	160	110	50	50	20	20		0	1.5	0		310,000									
116-B-1	BC2	3	Burial Ground Type 2 Overbdn		1	No	200	212		80	102		4		4		1.5	0		79,152									
116-B-1	BC2	3	Burial Ground Total																	7,464,447	2,378,174	0	5,086,273	332,944					
116-B-2	BC2	3	Burial Ground Contam Soil		1	No	80	60	60	50	30	30	10	10		0	1.0	0			28,333			3,967					
116-B-2	BC2	3	Burial Ground Exv. Soil		1	No	80	60	60	40	30	30	10	10		0	1.5	0	2,943	37,443									
116-B-2	BC2	3	Burial Ground Overburden		1	No	80	82		50	62		4		4		1.5	0		19,312									
116-B-2	BC2	3	Burial Ground Total																	56,755	28,333	0	28,422	3,967					
116-B-3	BC2	3	Burial Ground Contam Soil		1	No	380	350	350	315	275	275	20	20		0	1.0	0			2,185,667			305,993					
116-B-3	BC2	3	Burial Ground Exv. Soil		1	No	410	350	350	335	275	275	20	20		0	1.5	0	2,943	2,326,943									
116-B-3	BC2	3	Burial Ground Overburden		1	No	380	402	0	315	327	0	4		4		1.5	0		508,512									
116-B-3	BC2	3	Burial Ground Total																	2,835,455	2,185,667	0	649,791	305,993					
116-B-4	BC2	3	Burial Ground Contam Soil		6	No	5.316	5.316	5.316	5.316	5.316	5.316	15	15		0	0.0	0			2,545			356					
116-B-4	BC2	3	Burial Ground Exv. Soil		1	No	85	50	50	75	30	30	15	15		0	1.5	0	0	59,625									
116-B-4	BC2	3	Burial Ground Overburden		1	No	0	0	0	0	0	0	0		4		0	0		0									
116-B-4	BC2	3	Burial Ground Total																	59,625	2,545	0	57,0[illegible]	356					
116-B-5	BC2	3	Burial Ground Contam Soil		1	No	80	50	50	80	50	50	20	20		0	1.0	0			100,667			14,093					
116-B-5	BC2	3	Burial Ground Exv. Soil		1	No	110	50	50	110	50	50	20	20		0	1.5	0	4,898	138,898									
116-B-5	BC2	3	Burial Ground Overburden		1	No	80	105	0	80	105	0	5		5		1.5	0		47,625									
116-B-5	BC2	3	Burial Ground Total																	186,323	100,667	0	85,656	14,093					
116-B-6	BC2	3	Burial Ground Contam Soil		2	No	5.318	5.318	5.318	5.318	5.318	5.318	18	18		0	0.00	0			1,018			143					
116-B-6	BC2	3	Burial Ground Exv. Soil		1	No	70	16	16	67	13	13	18	18		0	1.5	0	2,943	36,277									
116-B-6	BC2	3	Burial Ground Overburden		1	No	52	64	0	49	61	0	4		4		1.5	0		12,808									
116-B-6	BC2	3	Burial Ground Total																	51,085	1,018	0	50,067	143		TV + 1%			
116-B-7	BC2	3	Burial Ground Contam Soil		1	No	24	8	8	24	8	8	8	8		0	1.00	0			2,219			311					
116-B-7	BC2	3	Burial Ground Exv. Soil		1	No	32	8	8	32	8	8	8	8		0	1.5	0	4,898	8,282					1,365				
116-B-7	BC2	3	Burial Ground Overburden		1	No	24	30	0	24	30	0	5		5		1.5	0		5,055									
116-B-7	BC2	3	Burial Ground Total																	13,337	2,219	0	9,753	311	1,365				
116-B-10	BC2	3	Burial Ground Contam Soil		1	No	66	48	48	58	18	18	28	20	8	0	1.00	0			54,347			7,609					
116-B-10	BC2	3	Burial Ground Exv. Soil		1	No	108	48	48	74	18	18	20	20		0	1.5	0	12,717	93,597					0	Ref. 116-B-10, No Overlap			
116-B-10	BC2	3	Burial Ground Overburden		1	No	88	112	0	58	82	0	8		8		1.5	0		56,384									
116-B-10	BC2	3	Burial Ground Total																	149,981	54,347	0	95,634	7,609					
118-C-1	BC2	3	Burial Ground Type 1 Trench - CS		6	No	340	300	300	60	20	20	20	20		0	1.0	0			1,552,000			217,260					
118-C-1	BC2	3	Burial Ground Type 1 Exv. Soil		1	No	580	500	500	460	400	400	20	20		0	1.5	0	2,943	4,566,943									
118-C-1	BC2	3	Burial Ground Type 1 Overbdn		1	No	540	552		440	452		4		4	0	1.5	0		974,112									
118-C-1	BC2	3	Burial Ground Type 2 Trench - CS		6	No	50	10	10	50	10	10	20	20		0	1.0	0			124,000			17,360					
118-C-1	BC2	3	Burial Ground Total																	5,541,055	1,676,000	0	3,865,055	234,640					
118-C-2	BC2	3	Burial Ground - Tank, CS		1	No	5.317	5.317	5.3	5.317	5.317	5.3	5	5		0	0.00	0			141			20					
118-C-2	BC2	3	Burial Ground Exv. Soil		1	No	20	5	5.3	20	5	5.3	5	5		0	1.5	0		915									
118-C-2	BC2	3	Burial Ground Overburden		1	No	5	11		5	11		2		2		1.5	0		144									
118-C-2	BC2	3	Burial Ground Total																	1,060	141	0	918	20					
126-B-1	BC2	3	Burial Ground Contam Soil		1	No	352	280	280	322	250	250	20	20		0	1.8	0			1,816,160			254,262					
126-B-1	BC2	3	Burial Ground Exv. Soil		1	No	352	280	280	322	250	250	20	20	0	0	1.8	0	4,696	1,820,858									
126-B-1	BC2	3	Burial Ground Overburden		1	No	352	370		322	340		5		5		1.8	0		597,590									
126-B-1	BC2	3	Burial Ground Total																	2,418,448	1,816,160	0	602,286	254,262		CS + 5%, TV + 1%			
126-B-3	BC2	3	Burial Ground Contam Soil		1	No	440	400	400	265	225	225	20	20		0	1.00	0			1,545,507			216,371	515,160	Total Waste and Volume is adjusted by a void adjustment of 515,160 cubic feet.			
126-B-3	BC2	3	Burial Ground Exv. Soil		1	No	460	400	400	285	225	225	20	20		0	1.5	0	162	2,199,162									
126-B-3	BC2	3	Burial Ground Overburden		1	No	440	443		265	268		1		1		1.5	0		117,661									
126-B-3	BC2	3	Burial Ground Total																	2,316,823	1,545,507	0	256,156	216,371	515,160				
128-B-1	BC2	3	Burial Ground Contam Soil		1	No	120	100	100	120	100	100	10	10		0	1.00	0			121,333			16,987					
128-B-1	BC2	3	Burial Ground Exv. Soil		1	No	130	100	100	130	100	100	10	10		0	1.5	0	4,696	137,898									
128-B-1	BC2	3	Burial Ground Overburden		1	No	120	135		120	135		5		5		1.5	0		81,375									
128-B-1	BC2	3	Burial Ground Total																	219,073	121,333	0	97,740	16,987					

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100-BC Volumes

Structural Excavation and Waste Plume Dimensions

Site Name	OU	Model Type	Site Type / Category	Linear Distance	Number of Units in Waste Site	Disposal Cell Applicable	Y or L_t Top Excavation Length	y_2 or L_b Max Contam Length at Bottom	y_1 DC Length	X or W_t Top Excavation Width	X_2 or W_b Max Contam Width at Bottom	x_1 DC Width	Z Total Depth Below Grade	z_1 DC Depth	z_3 Overburden Depth or DTBG	z_2 Plume Depth Below Waste Unit	m Waste Cell / Excavation Slope	o Lateral Plume Dispersion	Pump Volume	Total Volume	Contaminated Waste Volume	Other Waste Volumes, See Remarks	Total Non Contaminated Soil	Demolition Waste Volume	Overlap Overburden or Other Adjustment	Remarks	Subsurface Piping Data Diameter	Length	Volume
126-B-2	BC2	3	Burial Ground Contam Soil		1	No	750	750	750	135	135	135	22	22	0	0	0.00	0			2,227,500			311,850		Most probable contaminated plume is zero			
126-B-2	BC2	3	Burial Ground Exv. Soil		1	No	816	750	750	201	135	135	22	22		0	1.5	0	4,696	2,906,852									
126-B-2	BC2	3	Burial Ground Overburden		1	No	750	750		135	135		0		0		1.5	0		0									
126-B-2	BC2	3	Burial Ground Total																	2,906,652	2,227,500	0	679,152	311,850					
126-B-4	BC2	3	Burial Ground Contam Soil		1	No	10	10	10	10	10	10	0	0		0	1.00	0			0			0		Unit Was Sampled and Demolished, No			
126-B-4	BC2	3	Burial Ground Exv. Soil		1	No	10	10	10	10	10	10	0	0		0	1.5	0		0									
126-B-4	BC2	3	Burial Ground Overburden		1	No	10	10		10	10		0		0		1.5	0		0									
126-B-4	BC2	3	Burial Ground Total																	0	0	0	0	0					
128-B-2	BC2	3	Burial Ground Contam Soil		1	No	490	450	450	70	30	30	20	20		0	1.00	0			472,667			66,173					
128-B-2	BC2	3	Burial Ground Exv. Soil		1	No	510	450	450	90	30	30	20	20		0	1.5	0	4,696	586,698						No overlap credit calculated from 128-B-3 due to questionable location coordinates			
128-B-2	BC2	3	Burial Ground Overburden		1	No	490	505		70	65		5		5		1.5	0		182,875									
128-B-2	BC2	3	Burial Ground Total																	779,573	472,667	0	306,906	66,173					
128-B-3	BC2	3	Burial Ground Contam Soil		1	No	490	450	450	100	60	60	20	20		0	1.00	0			754,667			105,653					
128-B-3	BC2	3	Burial Ground Exv. Soil		1	No	510	450	450	120	60	60	20	20		0	1.5	0	4,696	874,698									
128-B-3	BC2	3	Burial Ground Overburden		1	No	490	505		100	115		5		5		1.5	0		267,500									
128-B-3	BC2	3	Burial Ground Total																	1,142,198	754,667	0	387,531	105,653					
128-C-1	BC2	3	Burial Ground Contam Soil		1	No	285	225	225	165	125	125	20	20		0	1.00	0			713,167			99,843					
128-C-1	BC2	3	Burial Ground Exv. Soil		1	No	285	225	225	185	125	125	20	20		0	1.5	0	4,696	801,198									
128-C-1	BC2	3	Burial Ground Overburden		1	No	265	260		165	180		5		5		1.5	0		235,125									
128-C-1	BC2	3	Burial Ground Total																	1,036,323	713,167	0	323,156	99,843					
			Category Average and/or Subtotal						241.84			88.00		16.21	3.89	0.00				27,178,212	14,880,110	0	12,581,776	1,871,215	816,525				
116-B-12	BC1	1	Crib			Yes	88	25	10	88	25	10	21	10	6	5	0	7.5		73,983	2,625		71,354	364					
116-B-3	BC1	1	Crib			Yes	79	25	10	79	25	10	18	10	3	5	0	7.5		53,046	2,625		50,421	364					
116-B-5	BC1	1	Crib			Yes	149	89	84	81	31	16	16.5	11.5	0	5	0	7.5		117,204	26,301		90,903	3,662					
116-B-6A	BC1	1	Crib	40		Yes	84	27	12	80	23	8	18	8	6	5	0	7.5		59,451	2,373		55,715	332	1,365	Overburden Removed by 116-B-7			
116-B-6B	BC1	1	Crib			Yes	77	23	8	73	18	4	18	8	5	5	0	7.5		45,774	1,241		44,533	174					
116-C-2A	BC2	1	Crib	84		Yes	271	107	22.66	264	90.33	15.33	54.8	6.8	20	26	0	42		2,009,331	122,656		1,720,820	17,172	165,855	Overburden Removed by 116-C-2C			
			Category Average and/or Subtotal						24.44			10.56		9.87	6.67	8.83				2,358,789	167,821	0	2,033,746	22,096	167,221				
116-B-4	BC1	1	French Drain			Yes	84	18	4.0	84	18	4.0	25	10	10	5		7.5		91,525	915		90,610	128					
116-B-9	BC1	1	French Drain	40		Yes	43	18	4.0	43	18	4.0	8	3	0	5		7.5		8,072	803		7,269	112		Ref: 132-B-3			
116-B-10	BC1	1*	French Drain - Avg. Cat Exc.	77		Yes	61	22	7.0	61	22	7.0	13	7	1	5		7.5		24,037	1,488		22,549	208	0	Ref: 116-B-10			
			Category Average and/or Subtotal						5.00			5.00		6.67	3.67	5.00				123,634	3,206	0	120,428	448	0				
116-B-7	BC1	1	Outfall Structure			Yes	120	42	27	107	29	14	26	21	0	5		7.5		156,390	11,741		144,650	1,644					
132-B-6	BC1	1	Outfall Structure			Yes	120	42	27	107	29	14	26	21	0	5		7.5		156,390	11,741		144,650	1,644					
132-C-2	BC1	1	Outfall Structure			Yes	147	69	54	107	29	14	26	21	0	5		7.5		204,126	22,581		181,545	3,161					
			Category Average and/or Subtotal						36			14		21	0	5				516,906	46,062	0	470,844	6,449	0				
116-B-15	BC2	1	Pit - Below Unit Contaminated Soil			No	142	115	100	82	65	50	9	4	0	5		7.5			31,000			0		Waste Below Base			
116-B-15	BC2	3	Pit - Disposal Cell Waste		1	No	104	100	100	54	50	50	2	2		0	1.0	0			10,611			1,485					
116-B-15	BC2	3	Pit - Excavated Soil		1	No	138	100	100	89	50	50	13	6	2	5	1.5	7.5	25,340	134,998									
116-B-15	BC2	3	Pit - Overburden		1	No	138	145	100	89	95	50	2		2		1.5	0		-26,134	Note: IT Estimates about 1/2 as					Void Space, First 2 Feet			
116-B-15	BC2		Pit Total																	108,862	41,611	0	67,251	1,485		CS + 23%, TV + 78%			
116-C-6	BC2	1	Pit			No	124	103	100	124	103	100	7	6	0	1		1.5		90,433	10,303		80,130	1,442		Less 45' x 55', Most probable contaminated plume is zero			
116-C-8	BC2	1	Pit			No	79	58	55	74	53	50	7	6	0	1		1.5		30,706	2,911		27,795	407					
			Category Average and/or Subtotal																	220,001	54,824	0	175,176	3,335	0				
116-C-2B	BC2	1	Pump Station			Yes	127	25	9.66	124	22	6.66	34	6	23	5		7.5		216,391	1,695		214,697	237					
			Category Average and/or Subtotal																	216,391	1,695	0	214,697	237	0				
116-B-11	BC1	1	Retention Basin		1	Yes	697	569	588.7	603	480.0	480	41	0	5	38	0.0	0	386,854	14,703,145	10,172,736		4,530,409	1,424,183		CS < .1%, TV + 23% From ITC Estimate			
116-C-5	BC1	1	Retention Basins		2	Yes	567	450	450.0	567	450.0	450.0	39	0	3	39	0.0	0	470,718	20,731,007	15,797,367		4,933,640	2,211,631		CS < .1%, TV + 12% From ITC Estimate			
			Category Average and/or Subtotal																	35,434,152	25,970,103	0	9,464,049	3,635,814	0				
116-C-2C	BC2	1	Sand Filter			Yes	124	53	38	104	33	18	23.5	18.25	0.25	5		7.5		151,275	21,771		129,504	3,048	0				
			Category Average and/or Subtotal																	151,275	21,771	0	129,504	3,048	0				
																				Drain Field Volumes									
1607-B1	BC1	1	Septic Tank			Yes	1040	1015	1000	42	17.33	2.33	8.33	0.33	3	5	0	7.5		255,707	50,381	1,076	204,247	7,204		Plus 1,078 cubic feet the for septic tank			
1607-B10	BC2	1	Septic Tank			Yes	130	105	90	42	17.33	2.33	8.33	0.33	3	5	0	7.5		29,624	4,955	64	24,605	703		Plus 64 cubic feet for septic tank			
1607-B11	BC2	1	Septic Tank			Yes	65	40	25	42	17.33	2.33	8.33	0.33	3	5	0	7.5		13,475	1,710	64	11,701	248		Plus 64 cubic feet for septic tank			
1607-B2	BC1	1	Septic Tank			Yes	3640	3615	3600	42	17.33	2.33	8.33	0.33	3	5	0	7.5		901,657	180,170	3,738	717,746	25,747		Plus 3738 cubic feet for the septic tank			
1607-B3	BC1	1	Septic Tank			Yes	424	399	384	42	17.33	2.33	8.33	0.33	3	5	0	7.5		102,866	19,631	449	82,565	2,811		Plus 449 cubic feet for the septic tank			
1607-B4	BC1	1	Septic Tank			Yes	120	95	80	42	17.33	2.33	8.33	0.33	3	5	0	7.5		27,140	4,456	64	22,620	633		Plus 64 cubic feet for septic tank			
1607-B5	BC1	1*	Septic Tank			Yes	65	40	25	42	17.33	2.33	8.33	0.33	3	5	0	7.5		13,475	1,710	67	11,696	248		Plus 67 cubic feet for the septic tank			
1607-B6	BC1	1*	Septic Tank			Yes	240	215	200	42	17.33	2.33	8.33	0.33	3	5	0	7.5		56,953	10,446	175	46,332	1,487		Plus 175 cubic feet for septic tank			
1607-B7	BC1	1	Septic Tank			Yes	136	111	96	42	17.33	2.33	8.33	0.33	3	5	0	7.5		31,115	5,255	64	25,776	747		Plus 84 cubic feet the for septic tank			
1607-B8	BC2	1*	Septic Tank			Yes	130	105	90	42	17.33	2.33	8.33	0.33	3	5	0	7.5		29,624	4,955	64	24,605	703		Plus 64 cubic feet for septic tank			
1607-B9	BC2	1*	Septic Tank			Yes	657	632	617	42	17.33	2.33	8.33	0.33	3	5	0	7.5		160,553	31,262	320	128,971	4,422		Plus 320 cubic feet for septic tank			
			Category Average and/or Subtotal						564			[illegible]		[illegible]	[illegible]	[illegible]				[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]				

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100-DR Volumes

Site Name	OU	Model Type	Site Type	ρ Linear Distance to Closest Waste Site	Number of Units in Waste Site	Disposal Cell Applicable	$Y = L_t$ Top Excavation Length	$y_2 = L_b$ Max Contam Length at Bottom	y_1 DC Length	$X = W_t$ Top Excavation Width	$x_2 = W_b$ Max Contam Width at Bottom	x_1 DC Width	Structural Dimensions Z Total Depth Below Grade	z_1 DC Depth	z_3 Overburden Depth or DTBG	z_2 Waste Plume Depth Below DBBG	m Waste Cell / Excavation Slope	a Lateral Plume Dispersion	Ramp Volume	Total Volume	Contaminated Waste Volume	Other Waste Volumes, See Remarks	Total Non Contaminated Soil	Demolition Waste Volume	Overlap Overburden or Other Adjustment	Remarks	Subproject Piping Data Diameter	Length	Volume
600-30	DR3	3	Dumping Area, CS		1	No	700	700	700	600	600	600	2	2 Est	0		0	0			840,000			117,600		The unit appears to be a laydown area			
600-30	DR3	3	Dumping Area, Exv Soil		1	No	706	700	700	606	600	600	2	2		0	1.5	0		847,824									
600-30	DR3	3	Dumping Area, Overburden		1	No	700	700		600	600		0		0		1.5	0		0									
600-30	DR3		Dumping Area Total																	847,824	840,000	0	7,824	117,600	0				
628-3	DR1	3	Burning Pit		1	No	270	250	250	80	40	40	10	10			1.0	0			130,333			18,247		The unit appears to be a laydown area or surface dump site			
628-3	DR1	3	Burial Ground Exv. Soil		1	No	260	250	250	70	40	40	10	10		0	1.5	0		146,500									
628-3	DR1	3	Burial Ground - Void Space		1	No	270	282		80	72		4		4		1.5	0											
628-3	DR1		Burial Ground Total																	146,500	130,333	0	16,167	18,247	0				
																				33,502,795	16,311,390	0	16,746,446	2,263,567	445,159				
116-D-2	DR1	1	Crib		1	Yes	100	25	10	100	25	10	25	10	10	5		7.5		109,375	2,625		106,750	368					
116-D-8	DR1	1	Crib		1	Yes	78	25	10	78	25	10	18	10	3 Est	5		7.5		53,046	2,625		50,421	368		Note: According to WIDS this site is the same as 116-DR-8, however assume that the coordinates are not accurate and each exist as a separate unit with no overlap.			
116-DR-4	DR2	1	Crib		1	Yes	84	25	10	84	25	10	23	15	3 Est	5		7.5		90,551	3,125		87,425	434		The Unit received 4,000 liters, 1,057 gallons, or 141 cubic feet of radioactively contaminated liquid from isolated tubes containing ruptured fuel elements from the 105-DR fuel storage basin.			
116-DR-7	DR2	1	Crib		1	Yes	74	20	5	74	20	5	18	10	3 Est	5		7.5		44,136	1,125		43,011	156		The Unit received 4,000,000 liters, 1,056,803 gallons, or 141,274 cubic feet of radioactively contaminated water and sludge from the 105DR fuel storage basin.			
																				297,108	9,500	0	287,606	1,330	0				
116-D-3	DR1	1	French Drain	78		Yes	51	18	3	51	18	3	11	5	1	5		7.5		14,091	690		13,401	97		Ref: 116-D-4, No Overlap			
116-D-4	DR1	1	French Drain			Yes	51	18	3	51	18	3	11	5	1	5		7.5		14,091	690		13,401	97		Ref: 116-D-3, No Overlap			
116-D-6	DR1	1	French Drain			Yes	45	18	3	45	18	3	8	3	1	5		7.5		8,477	672		8,805	94					
116-DR-8	DR2	1	French Drain	0		Yes	70	25	10	70	25	10	15	10	0	5		7.5		36,375	2,625		1,194	368	32,556	Overburden removed entirely by 116-D-8			
																				74,034	4,677	0	36,801	655	32,556				
116-D-5	DR1	1	Outfall Structure			Yes	156	75	60	120	39.0	24	27	21	1	5	0.0	7.5		262,663	40,965		221,718	5,735					
116-DR-5	DR1	1	Outfall Structure			Yes	123	42	27	110	29.0	14	27	21	1	5	0.0	7.5		169,574	11,741		157,833	1,644					
																				432,257	52,706	0	379,551	7,379	0				
132-D-3	DR1	1	Pump Station			Yes	146	35	20	146	35.0	20	37	32	0	5	0.0	7.5	232,730	573,759	16,675		557,084	2,335		The building has been demolished and the rubble is stored in the below grade portion. The debris has been covered with about 3.25 ft. of clean fill			
132-DR-1	DR2	1	Pump Station			Yes	75	51	36	73	49.0	34	8	3	0	5	0.0	7.5		31,126	12,792		18,336	1,791		The building has been decommissioned and no further remediation should occur other than soil testing and clearance.			
																				604,887	29,467	0	575,420	4,125	0				
116-D-7	DR1	1	Retention Basin		1	No	603	585	584.96	603	480.0	480.01	41	0	5 Est	38	0	0	428,655	14,660,266	10,108,392		4,551,876	1,415,175					
116-DR-9	DR1	1	Retention Basin		1	No	860	752	751.56	603	480.0	480.01	41	0	5	36	0	0	428,655	14,358,013	12,987,227		5,371,765	1,818,212					
120-D-1	DR1	1	Pond		1	No	518	512	511.76	563	511.76	511.23	17.1	15	0	21	0	0		805,600	548,704		255,515	76,859	381	Per closure plan, about 20,000 cubic yards of contaminated soils are to be removed			
																				33,824,881	23,645,324	0	10,179,136	3,310,345	381				
1607-D1	DR3	1	Septic Tank			Yes	1040	1015	1000	42	17.33	2.33	8.33	0.33	3 Est	5	0	7.5		255,707	50,381	545	204,740	7,135		Other Waste Volume is for the Septic Tank.			
1607-D2	DR1	1	Septic Tank			Yes	4464	4439	4424	42	17.33	2.33	8.33	0.33	3	5	0	7.5		1,106,373	221,304	2,544	882,525	31,339		Other Waste Volume is for the Septic Tank.			
1607-D3	DR2	1	Septic Tank			Yes	120	95	80	42	17.33	2.33	8.33	0.33	3	5	0	7.5		27,140	4,456	47	22,637	630		Other Waste Volume is for the Septic Tank.			
1607-D4	DR1	1	Septic Tank			Yes	88	63	48	42	17.33	2.33	8.33	0.33	3	5	0	7.5		19,190	2,858	28	16,303	404		Other Waste Volume is for the Septic Tank.			
1607-D5	DR1	1	Septic Tank			Yes	88	63	48	42	17.33	2.33	8.33	0.33	3	5	0	7.5		19,190	2,858	28	16,303	404		Other Waste Volume is for the Septic Tank.			
																				1,427,599	281,856	3,232	1,142,509	39,912	0				
120-D-2	DR1	1	Storage Tank		1	Yes	166	106	93.33	166	108.33	93.33	20	14	1	5	0	7.5		388,704	172,874		215,830	24,202					
126-D-3	DR1		Brine Tank (126-B-4)			Yes	58	25	10	58	25	10	11	5	1	5	0	7.5		19,943	2,125		17,818	298		Only NaCl levels were higher than hazardous material limits. The material was removed and the unit was demolished, and the pits were filled with clean fill			
130-D-1	DR1		Storage Tank			Yes	73	25	10	71	23	8	16	8	3	5	0	7.5		39,920	2,090		37,830	293		A gasoline storage tank which has been removed, and the surrounding soils tested to be free of contaminates.			
																				448,567	177,089	0	271,478	24,792	0				
116-D-1A	DR1		Trench, CS		1	No	138	138	130	96	96	88	11	4	2	5	1.0	0			69,899			9,786		The Unit received 200,000 liters, 52,840 gallons, or 7,064 cubic feet of radioactively contaminated water and sludge from the 105D Fuel Storage Basin. The unit has been covered with 6 ft. of clean soil			
116-D-1A	DR1	2m	Trench Exv. Soil		1	No	171	138	130	129	96	88	11	4.00	2	5	1.5	0		192,192									
116-D-1A	DR1	2m	Trench Overburden - Void		1	No	142	130		100	88		0		2		1.0	0		0									
116-D-1A	DR1	2m	Trench Total																	192,192	69,899	0	122,293	9,786	0				
116-D-1B	DR1		Trench, CS		1	No	120	120	100	30	30	10	20	10	5	5	1.0	0			31,667			4,433		The Unit received 8,000,000 liters, 2,113,606 gallons, or 282,548 cubic feet of radioactively contaminated water and sludge			

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100-BC Volumes

Structural Excavation and Waste Plume Dimensions

Site Name	OU	Model Type	Site Type / Category	Linear Distance	Number of Units in Waste Site	Disposal Cell Applicable	$Y = L_1$ Top Excavation Length	$y_2 = L_b$ Max Contam Length at Bottom	y_1 DC Length	$X = W_1$ Top Excavation Width	$X_2 = W_b$ Max Contam Width at Bottom	x_1 DC Width	Z Total Depth Below Grade	z_1 DC Depth	z_3 Overburden Depth or DTBG	z_2 Plume Depth Below Waste Unit	m Waste Cell / Excavation Slope	a Lateral Plume Dispersion	Ramp Volume	Total Volume	Contaminated Waste Volume	Other Waste Volumes, See Remarks	Total Non Contaminated Soil	Demolition Waste Volume	Overlap Overburden or Other Adjustment	Remarks
132-B-3	BC1	3	Burial Ground - Stack, OD		1	Yes			300			10.635	10.635	10.635	0	0	0.0	0			33,930			4,750		Average Stack Radius is 6 Feet
132-B-3	BC1	3	Burial Ground - Stack, ID		1	Yes			300			9.749	9.749	9.749	0	0	0.0	0			-28,511			-3,992		Average Stack Radius is 5.5 Feet
132-B-3	BC1	3	Burial Ground Exv. Soil		1	Yes	354	300	300	84	30	30	18	18	0	0	1.5	0		339,676					3,954	Overburden Removed by 116-B-9
132-B-3	BC1	3	Burial Ground Overburden		1	Yes	354	354	0	84	84	0	0		0		1.5	0		0						
132-B-3	BC1	3	Demolished Building Total																	339,876	5,419	0	330,499	759	3,954	CS - 15%
132-C-1	BC1	3	Burial Ground - Stack, OD		1	Yes			200			9.749	9.749	9.749	0	0	0.0	0			19,007			2,661		Average Stack Radius is 6 Feet
132-C-1	BC1	3	Burial Ground - Stack, ID		1	Yes			200			7.090	7.090	7.090	0	0	0.0	0			-10,053			-1,407		Average Stack Radius is 8 Feet
132-C-1	BC1	3	Burial Ground Exv. Soil		1	Yes	248	200	200	73	25	25	16	16	0	0	1.5	0		178,688						
132-C-1	BC1	3	Burial Ground Overburden		1	Yes	248	248	0	73	73	0	0		0		1.5	0		0						
132-C-1	BC1	3	Demolished Building Total																	178,688	8,954	0	169,731	1,254		CS - 2%
			Category Average and/or Subtotal						250			10.2		10.2	0.0	0.0				518,564	14,373	0	500,231	2,012	3,954	
116-B-16	BC1	1	Storage Tank	0		Yes	77	26	10.67	72	20.75	5.75	17	9	3	5	0	7.5		43,917	1,850		0	0	42,067	All Non Contaminated Soil Removed by 116-B-6A
116-C-3	BC2	3	Burial Ground - Tank		2	No	23	23	23.0	9	9	8.9	12	8.9	3	0	0.0	0			3,613			506		Most probable contaminated plume is zero
116-C-3	BC2	3	Burial Ground Exv. Soil		1	No	58	23	23.0	54	22	22.0	12	9	3	0	1.5	0		20,509						
116-C-3	BC2	3	Burial Ground Overburden		1	No	59	68		58	67		3		3		1.5	0		11,771						
116-C-3	BC2	3	Burial Ground Total																	32,280	3,613	0	28,647	506		
			Category Average and/or Subtotal																	76,197	5,463	0	28,647	506	42,067	
120-B-1	BC1	1	Sump	872		Yes	76	25	10	76	25	10	17	10	2	5		7.5		47,039	2,625		44,414	368		
			Category Average and/or Subtotal																	47,839	2,625	0	44,414	368	0	
116-B-1	BC2	2	Trench		1	No	369	369	355	44	44	30	26	10	5	11	0.7	7.7			206,853			28,859		
116-B-1	BC2	2	Trench Exv. Soil		1	No	447	369	355	122	44	30	26	10	5	11	1.5	0	178,308	1,071,854						
116-B-1	BC2	2	Trench Overburden – Void		1	No	376	355		51	30		0		0		0.7	0		0						
116-B-1	BC2	2	Trench Total																	1,071,854	206,853	0	865,101	28,859		CS + 2%, TV + 1%
116-B-13	BC2	2m	Trench		1	No	70	70	50	70	70	50	13	10.00	0	3	1.0	3			27,367			3,831		Estimated 5141 cubic feet of contaminated soil due to trench bank overflow.
116-B-13	BC2	2m	Trench Exv. Soil		1	No	109	70	50	109	70	50	13	10.00	0	3	1.5	0		105,781						
116-B-13	BC2	2m	Trench Overburden – Void		1	No	70	50		70	50		0		0		1.0	0		0						
116-B-13	BC2	2m	Trench Total																	105,781	27,367	0	78,414	3,831		CS + 19%, TV - Not calculated by ITC
116-B-14	BC2	2m	Trench		1	No	133	133	120	23	23	10	13	6.66	3.34	3	1.0	3			15,881			2,223		
116-B-14	BC2	2m	Trench Exv. Soil		1	No	172	133	120	62	23	10	13	6.66	3.34	3	1.5	0		86,717						
116-B-14	BC2	2m	Trench Overburden – Void		1	No	140	120		30	10		3		3.34		1.0	0		-6,795						
116-B-14	BC2	2m	Trench Total																	77,921	15,881	0	62,840	2,223		CS + 2%, TV - Not calculated by ITC
116-B-2	BC2	2m	Trench		1	No	115	115	75	50	50	10	43	20	10	13	1.0	13			130,083	173,424		42,491		Estimated 173,424 cubic feet of contaminated soil due to trench bank
116-B-2	BC2	2m	Trench Exv. Soil		1	No	244	115	75	179	50	10	43	20	10	13	1.5	0	212,571	1,155,970						
116-B-2	BC2	2m	Trench Overburden – Void		1	No	135	75		70	10		4		4		1.0	0		-18,000						
116-B-2	BC2	2m	Trench Total																	1,137,970	130,083	173,424	834,462	42,491		CS - 133%, TV - 41%
116-C-1	BC2	2m	Trench		1	No	575	575	500	125	125	50	30	25	0	5	1.5	7.5			2,156,250	150,009		322,876		Estimated 150,009 cubic feet of contaminated soil due to trench bank
116-C-1	BC2	2m	Trench Exv. Soil		1	No	665	575	500	215	125	50	30	25	0	5	1.5	0	250,398	3,432,644						
116-C-1	BC2	2m	Trench Overburden – Void		1	No	550	500		100	50		0		0		1.0	0		0						
116-C-1	BC2	2m	Trench Total																	3,432,648	2,156,250	150,009	1,126,389	322,876		CS < 1%, TV - 0%
			Category Average and/or Subtotal						220			30		14.332	3.666	7				5,826,274	2,536,434	323,433	2,966,407	400,381	0	
none			Piping						21434			4.75		4.75	13											Note: All of the 21,434 feet of piping and 2143 linear feet of contaminated soils are to be removed
																			Total bcf	75,260,220	43,404,634	329,600	30,507,863	8,146,194	818,822	

* Dimensional Data Not Available

Note: All volumes are in Bank Cubic Feet (bcf)

Total Volume = 15,852,062

Contaminated Volume = 3,177,333

Total Overburden = 12,701,285

Source Data: "100 B/C LSR Volume Estimate" Dated 7/14/93

Subgrouped Piping Data

Diameter	Length	Volume
1.505206	.624	882
2.005208	1620	4,800
3.505208	1050	10,133
4.041667	2350	30,150
4.505208	440	7,014
5.005208	4000	96,415
5.505208	10850	253,614
TOTAL FOOTAGE AND VOLUME	21434	402,959

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10/18/93

100-DR Volumes

Site Name	OU	Model Type	Site Type	C Linear Distance to Closest Waste Site	Number of Units in Waste Site	Disposal Cell Applicable	Y or L_1 Top Excavation Length	y_2 or L_b Max Contam Length at Bottom	y_1 DC Length	X or W_1 Top Excavation Width	x_2 or W_b Max Contam Width at Bottom	x_1 DC Width	Z Total Depth Below Grade (Structural Dimensions)	z_1 DC Depth (Structural Dimensions)	z_3 Overburden Depth or DTBG	z_2 Waste Plume Depth Below DBBG	m Waste Cell / Excavation Slope	a Lateral Plume Dispersion	Ramp Volume	Total Volume	Contaminated Waste Volume	Other Waste Volumes, See Remarks	Total Non Contaminated Soil	Demolition Waste Volume	Overlap Overburden or Other Adjustment	Remarks	Subproject Piping Data: Diameter	Length	Volume
132-D-1	DR1	3	Building		1	Yes	168	168	168	96	92	88	12	11	1	0	0.0	0			197,566		-197,564	27,660		The building has been demolished and the rubble is stored in the basement. The debris has been covered with about 3.25 ft. of clean fill and topped with gravel at grade level.			
132-D-1	DR1	3	Demolished Building Exv. Soil		1	Yes	204	168	168	134	96	88	12	11	1	0	1.5	0		260,208									
132-D-1	DR1	3	Demolished Building Overburden		1	Yes	188	177		84	107		3		3		1.5	0		53,064									
132-D-1	DR1	3	Demolished Building Total																	313,272	197,566	0	115,70?	27,660					
132-D-2	DR1	3	Building		1	Yes	59	59	59	30	30	30	27	27	0	0		0			47,790			6,691		The building has been demolished and the rubble is stored in the below grade portion. The debris has been covered with about 3.25 ft. of clean fill.			
132-D-2	DR1	3	Demolished Building Exv. Soil		1	Yes	140	59	59	111	30	30	27	27	0	0	1.5	0	123,930	328,091									
132-D-2	DR1	3	Demolished Building Overburden		1	Yes	59	88		30	39		3		3		1.5	0		6,503									
132-D-2	DR1	3	Demolished Building Total																	334,603	47,790	0	286,89?	6,691					
																				447,855	245,356	0	402,59?	34,350	0				
116-D-10	DR1	3	Pit #1, Contaminated Soil		1	No	41	35	35	24	22	22	3	3			1.0	0			2,650			400		The pit consists of two sections which have been backfilled to grade.			
116-D-10	DR1	3	Pit #2, Contaminated Soil		1	No	58	50	50	32	24	24	4	4			1.0	0			6,060			850					
116-D-10	DR3	3	Pits, Excavated Soil			No	125	113	113	44	32	32	4	4			1.5			18,136						Connecting Channel Assumed 20 Feet Long			
116-D-10	DR3	3	Pits, Overburden			No	125	125		32	32		0		0		1.5			0									
116-D-10	DR3		Pit Total																	18,136	8,826	0	9,208	1,250	0				
116-DR-10	DR3	3	Pit, Contaminated Soil		1	No	82	80	80	62	50	50	6	6	0		1.0	0			26,966			4,056					
116-DR-10	DR3	3	Pit, Excavated Soil		1	No	88	80	80	68	50	50	6	6	0		1.5	0		31,668									
116-DR-10	DR3	3	Pit, Overburden		1	No	92	104		62	74		4		4		1.5	0		26,704									
116-DR-10	DR3		Pit Total																	58,372	28,966	0	29,404	4,056	0				
118-D-1	DR3	3	Burial Ground, Contam Soil		1	No	480	450	450	415	375	375	20	20	0		1.0	0			3,715,667			520,183		Estimated buried waste volume is 10,000 cu meters or 13,500 cu yds.			
118-D-1	DR3	3	Burial Ground Exv. Soil		1	No	510	450	450	435	375	375	20	20	0		1.5	0	68,000	3,962,000									
118-D-1	DR3	3	Burial Ground Overburden		1	No	480	502		415	427		4		4		1.5	0		835,312									
118-D-1	DR3		Burial Ground Total																	4,797,312	3,715,667	0	1,081,645	520,183	0				
118-D-2	DR3	3	Burial Ground Type 1 Trench - CS		11 Est	No	340	300	300	60	20	20	20	20			1.0	0			2,845,333			106,347		Estimated buried waste volume is 10,000 cu meters or 13,500 cu yds.			
118-D-2	DR3	3	Burial Ground Type 2 Trench - CS		5	No	32	13	13	25	6	6	24	24			0.4				45,894			6,439					
118-D-2	DR3	3	Burial Ground Type 1 Exv. Soil			No	1060	1000	1000	420	360	360	20	20			1.5		68,000	6,040,000									
118-D-2	DR3	3	Burial Ground Type 1 Overbdn			No	1040	1052		400	412		4		4		1.5			1,696,752									
118-D-2	DR3		Burial Ground Total																	9,736,752	2,891,327	0	6,847,425	404,786	0				
118-D-3	DR3	3	Burial Ground, Contam Soil		12 Est	No	240	200	200	60	20	20	20	20			1.0	0			2,144,000			100,160		Limited use, burial ground received only 100 cu meters or 135 cu yds of solid burial waste.			
118-D-3	DR3	3	Burial Ground Exv. Soil		1	No	1060	1000	1000	310	250	250	20	20		0	1.5	0	68,000	5,842,000									
118-D-3	DR3	3	Burial Ground Overburden		1	No	1040	1052		290	302		4		4		1.5	0		1,238,512									
118-D-3	DR3		Burial Ground Total																	7,080,512	2,144,000	0	4,936,512	100,160	0				
118-D-4	DR3	3	Burial Ground, Contam Soil		6 Est	No	200	160	160	60	20	20	20	20			1.0	0			1,173,333			164,267		Estimated buried waste volume is 20,000 cu meters or 27,000 cu yds.			
118-D-4	DR3	3	Burial Ground Exv. Soil		1	No	660	600	600	260	200	200	20	20		0	1.5	0	68,000	2,972,000									
118-D-4	DR3	3	Burial Ground Overburden		1	No	640	652		240	252		4		4		1.5	0		635,712									
118-D-4	DR3		Burial Ground Total																	3,607,712	1,173,333	0	2,434,373	164,267	0				
118-D-5	DR2	3	Burial Ground		2	No	80	40	40	40	20	20	10	10			1.0	0			30,667			4,293		Unit consists of two trenches 40 ft. long. Limited use, burial ground received only 10 cu meters or 13.5 cu yds of solid burial waste.			
118-D-5	DR2	3	Burial Ground Exv. Soil		1	No	90	60	60	110	80	80	10	10		0	1.5	0		72,000									
118-D-5	DR2	3	Burial Ground Overburden		1	No	60	72		80	92		4		4		1.5	0		22,752									
118-D-5	DR2		Burial Ground Total																	94,752	30,667	0	64,085	4,293	0				
118-DR-1	DR3	3	Burial Ground		1	No	155	125	125	105	75	75	15	15			1.0	0			190,125			26,618		Unit consists of one trench running north and south. Limited use, burial ground received only 20 cu meters or 27 cu yds of solid burial waste.			
118-DR-1	DR3	3	Burial Ground Exv. Soil		1	No	170	125	125	120	75	75	15	15		0	1.5	0	34,250	256,500									
118-DR-1	DR3	3	Burial Ground Overburden		1	No	155	167		105	117		4		4		1.5	0		71,532									
118-DR-1	DR3		Burial Ground Total																	328,032	190,125	0	137,907	26,618	0				
126-D-1	DR1	3	Ash Pit, as (126-C-1)		1	No	275	225	225	175	125	125	25	25			1.0	0			942,706			131,979		Site received coal ash that was sluiced with raw river water to the site! Dimensions unknown. 120-D-1 Pond removes 456,159 cubic feet of overburden from this unit.			
126-D-1	DR1	3	Burial Ground Exv Soil		1	No	300	225	225	200	125	125	25	25		0	1.5	0	106,250	1,184,375					445,159				
126-D-1	DR1	3	Burial Ground Overburden		1	No	275	267		175	187		4		4		1.5	0		203,492									
126-D-1	DR1		Burial Ground Total																	1,387,867	942,708	0	0	131,979	445,159				
126-D-2	DR1	3	Demolition and Inert Landfill as (126-B-3)		1	No	440	400	400	285	225	225	20	20	0		1.0	0			2,060,667			288,493					
126-D-2	DR1	3	Burial Ground Exv Soil		1	No	460	400	400	285	225	225	20	20		0	1.5	0	68,000	2,267,000									
126-D-2	DR1	3	Burial Ground Overburden		1	No	440	440		285	285		0		0		1.5	0		0									
126-D-2	DR1		Burial Ground Total																	2,267,000	2,060,667	0	206,333	288,493	0				
126-DR-1	DR2	3	Demolition and Inert Landfill - CS		1	No	565	525	525	42	42	42	20	20			1.0	0			678,467			94,985		After four 3,750,000 gallon tanks were removed, the unit was used as a burial ground. The overall depth is unknown, and needs to be assumed.			
126-DR-1	DR2	3	Demolition and Inert Landfill - ES		1	No	585	525	525	102	42	42	20	20		0	1.5	0	68,000	473,200									
126-DR-1	DR2	3	Demolition and Inert Landfill - OB		1	No	565	577		82	94		4		4		1.5	0		201,040									
126-DR-1	DR2		Burial Ground Total																	1,074,240	678,467	0	395,773	94,985	0				
128-D-1	DR3	3	Burning Pit, CS		1	No	120	100	100	120	100	100	10	10			1.0	0			121,333			16,987					
128-D-1	DR3	3	Burning Pit, Exv. Soil		1	No	130	100	100	130	100	100	10	10		0	1.5	0		133,000									
128-D-1	DR3	3	Burning Pit, Overburden		1	No	120	132		120	132		4		4		1.5	0		63,552									
128-D-1	DR3		Burial Ground Total																	196,552	121,333	0	75,219	16,987	0				
128-D-2	DR1	3	Burning Pit, CS		1	No	240	240	240	280	240	240	20	20			1.0	0	0		1,354,667			169,653					
128-D-2	DR1	3	Burning Pit, Exv. Soil		1	No	300	240	240	300	240	240	20	20		0	1.5	0	68,000	1,532,000									
128-D-2	DR1	3	Burning Pit, Overburden		1	No	280	292		280	292		4		4		1.5	0		327,232									
128-D-2	DR1		Burial Ground Total																	1,859,232	1,354,667	0	504,565	169,653	0				

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100-DR Volumes

Site Name	OU	Model Type	Site Type	C Linear Distance to Closest Waste Site	Number of Units in Waste Site	Disposal Cell Applicable	$Y = L_1$ Top Excavation Length	$y_2 = L_b$ Max Contam Length at Bottom	y_1 DC Length	$X = W_1$ Top Excavation Width	$X_2 = W_b$ Max Contam Width at Bottom	x_1 DC Width	Z Total Depth Below Grade	z_1 DC Depth	z_3 Overburden Depth or OTBG	z_2 Waste Plume Depth Below OBBG	m Waste Cell / Excavation Slope	a Lateral Plume Dispersion	Ramp Volume	Total Volume	Contaminated Waste Volume	Other Waste Volumes, See Remarks	Total Non Contaminated Soil	Demolition Waste Volume	Overlap Overburden or Other Adjustment	Remarks	Diameter	Length	Volume
116-D-1B	DR1	2m	Trench Exv. Soil		1	No	140	120	100	90	30	10	20	10	5	5	1.5	0	88,000	254,000									
116-D-1B	DR1	2m	Trench Overburden – Void		1	No	130	100		40	10		0		4		1.0	0		0									
116-D-1B	DR1	2m	Trench Total																	254,000	31,667	0	222,333	4,433	0				
116-DR-1	DR1		Trench, CS		1	No	328	328	300	43	43	15	25	14	6	5	1.0	0			139,577			19,541		This unit overflowed via underground pipeline into 116-DR-2. Overlap is not calculated until GPS or some other positioning data is available.			
116-DR-1	DR1	2m	Trench Exv. Soil		1	No	403	328	300	118	43	15	25	14	6	5	1.5	0	106,250	853,538									
116-DR-1	DR1	2m	Trench Overburden – Void		1	No	340	300		55	15		0		0		1.0	0		0									
116-DR-1	DR1	2m	Trench Total																	853,538	139,577	0	713,960	19,541	0				
116-DR-2	DR1		Trench, CS		1	No	178	178	150	38	38	10	25	14	6	5	1.0	0			72,497			10,150	-				
116-DR-2	DR1	2m	Trench Exv. Soil		1	No	253	178	150	113	38	10	25	14	6	5	1.5	0	106,250	524,725									
116-DR-2	DR1	2m	Trench Overburden – Void		1	No	190	150		50	10		0				1.0	0		0									
116-DR-2	DR1	2m	Trench Total																	524,725	72,497	0	452,220	10,150	0				
116-DR-3	DR2		Trench, CS		1	No	74	74	60	54	54	40	15	7	3	5	1.0	0			25,795			3,611		The Unit received 4,000,000 liters, 1,056,803 gallons, or 141,274 cubic feet of radioactively contaminated water and sludge from the 105DR fuel storage basin.			
116-DR-3	DR2	2m	Trench Exv. Soil		1	No	118	74	60	88	54	40	15	7	3	5	1.5	0	38,250	151,515									
116-DR-3	DR2	2m	Trench Overburden – Void		1	No	80	60		60	40		10		4		1.0	0		-35,333									
116-DR-3	DR2	2m	Trench Total																	116,182	25,795	0	86,367	3,611	0				
116-DR-6	DR2		Trench, CS	78	1	No	64	64	50	24	24	10	15	7	3	5	1.0	0			11,535			1,615		The Unit received 4,000,000 liters, 1,056,803 gallons, or 141,274 cubic feet of radioactively contaminated water and sludge from the 105DR fuel storage basin.			
116-DR-6	DR2	2m	Trench Exv. Soil		1	No	100	64	50	68	24	10	15	7	3	5	1.5	0	38,250	101,115					88,561	Overburden removed entirely by 116-D-3			
116-DR-6	DR2	2m	Trench Overburden – Void		1	No	70	50		30	10		0		0		1.0	0		0									
116-DR-6	DR2	2m	Trench Total																	101,115	11,535	0	-1	1,615	88,581				
																				2,041,751	350,969	0	1,601,201	40,136	88,581				
none			Piping																4,698							Note: Pipeline Volumes are in addition to waste site volumes.	1.172	140	136
																		TOTALS bcf		73,201,833	41,186,187	8,232	31,822,715	5,755,562	567,471		1.75	1470	3,536
																				Note: All volumes are in Bank Cubic Feet (bcf)						Total Volume = 45,278,136	4.25	3720	30,841
																										Contaminated Volume = 10,951,370	5.5	8900	235,215
																											2.75	300	1,762
																										Total Overburden = 34,314,759	4.75	400	4,418
																										Source Data: Report ... Table 2-7, Pg. 22, and Environmental Engineering Calculations Dated 7/92			
																										Dated 7/1493	5.5	2340	55,596
																										TOTAL FOOTAGE AND VOLUME		18270	331,544

Subproject Piping Data

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10/18/93

100-FR Volumes

Structural Excavation and Waste Plume Dimensions

Site Name	OU	Model Type	Site Type / Category	C Linear Distance to Closest Waste Site	Number of Units in Waste Site	Disposal Cell Applicable	$Y = L_1$ Top Excavation Length	$y_2 = L_b$ Max Contam Length at Bottom	y_1 DC Length	$X = W_1$ Top Excavation Width	$x_2 = W_b$ Max Contam Width at Bottom	x_1 DC Width	Z Total Depth Below Grade	z_1 DC Depth	z_3 Overburden Depth or DTBG	z_2 Plume Depth Below Waste Unit	m Waste Cell / Excavation Slope	a Lateral Plume Dispersion	Ramp Volume	Total Volume	Contaminated Waste Volume	Other Waste Volumes, See Remarks	Overburden	Demolition Waste Volume	Overlap Overburden Adjustment	Remarks	Subsurface Piping Data: Diameter	Length	Volume
132-F-3	FR1		Demolished Building, CS		1	Yes	166	166	166	96	96	96	15	11	4	0	0.0	0			246,960			34,574		In 1964 the building was demolished leaving the walls below grade 3 to 4 ft. intact to serve as a barrier for rubble. The site was covered with with an overburden of 4 to 5 ft. and topped with gravel			
132-F-3	FR1	3	Demolished Building Env. Soil		1	Yes	201	168	168	140	98	98	14	11	3	0	1.5	0		308,894					21,830				
132-F-3	FR1	3	Demolished Building Overburden		1	Yes	188	188	0	98	98	0	0		0		1.5	0		0									
132-F-3	FR1	3	Demolished Building Total																	308,894	246,960	0	40,204	34,574	21,830				
132-F-5	FR1		Demolished Building, CS		1	Yes	59	59	59	39	39	39	32	27	5	0	0.0	0			73,632			10,306		The unit was demolished in situ and buried in place. The rubble and unit is covered with a minimum of 3.25 ft. 132-F-3 removes 21,830 bcf from 132-F-5.			
132-F-5	FR1	3	Demolished Building Env. Soil		1	Yes	149	59	59	129	39	39	30	27	3	0	1.5	0	149,175	431,505									
132-F-5	FR1	3	Demolished Building Overburden		1	Yes	59	59	0	39	39	0	0		0		1.5	0		0									
132-F-5	FR1	3	Demolished Building Total																	431,505	73,632	0	357,873	10,306					
																				740,399	320,592	0	398,077	44,880	21,830				
118-F-1	FR2		Burial Ground, CS		8	No	340	300	300	60	20	20	20	20	0	0	1.0	0			2,069,333			289,707		Contains trenches which are typically 300 x 20 oriented north - south. Estimated buried volume is 20,000 cu meters or 27,000 cu yds.			
118-F-1	FR2	3	Burial Ground Env. Soil		1	Yes	860	800	800	460	400	400	20	20	0	0	1.5	0	68,000	5,492,000									
118-F-1	FR2	3	Burial Ground Overburden		1	Yes	840	852		440	452		4		4		1.5	0		1,152,512									
118-F-1	FR2	3	Burial Ground Total																	6,644,512	2,069,333	0	4,575,179	289,707					
118-F-2	FR2		Burial Ground, CS		5	No	290	250	250	60	20	20	20	20	0	0	1.0	0			1,093,333			153,067		Contains trenches which are typically 250 x 20 oriented north - south. Estimated buried volume is 10,000 cu meters or 13,500 cu yds.			
118-F-2	FR2	3	Burial Ground Env. Soil		1	Yes	428	368	368	366	326	326	20	20	0	0	1.5	0	68,000	2,907,780									
118-F-2	FR2	3	Burial Ground Overburden		1	Yes	408	420		366	378		4		4		1.5	0		616,060									
118-F-2	FR2	3	Burial Ground Total																	3,523,840	1,093,333	0	2,430,507	153,067					
118-F-3	FR2		Burial Ground, CS		1	No	205	175	175	80	50	50	15	15	0	0	1.0	0			186,375			26,093		Estimated buried volume is 10.0 cu meters or 13.5 cu. yds. of radioactive material			
118-F-3	FR2	3	Burial Ground Env. Soil		1	Yes	220	175	175	85	50	50	15	15	0	0	1.5	0	38,250	255,563									
118-F-3	FR2	3	Burial Ground Overburden		1	Yes	205	217		80	92		4		4		1.5	0		72,632									
118-F-3	FR2	3	Burial Ground Total																	328,195	186,375	0	141,820	26,093					
118-F-4	FR2		Burial Ground, CS		1	No	42	10	10	42	10	10	16	10	6	0	1.0	0			12,181			1,705		Estimated buried volume is 10.0 cu meters or 13.5 cu. yds. of silica gel.			
118-F-4	FR2	3	Burial Ground Env. Soil		1	Yes	58	10	10	54	10	10	16	10	6	0	1.5	0		21,568									
118-F-4	FR2	3	Burial Ground Overburden		1	Yes	42	54		42	54		4		4		1.5	0		9,264									
118-F-4	FR2	3	Burial Ground Total																	30,832	12,181	0	18,651	1,705					
118-F-5	FR2		Burial Ground, CS (L & W Est.)		8	No	130	100	100	50	20	20	15	15	0	0	1.0	0			492,000			68,880		Unit is an above ground burial mound. Estimated buried volume is 10,000 cu meters or 13,500 cu. yds. of low-level sawdust from animal pens			
118-F-5	FR2	3	Burial Ground Env. Soil		1	Yes	545	500	500	195	150	150	15	15	0	0	1.5	0	38,250	1,392,750									
118-F-5	FR2	3	Burial Ground Overburden		1	Yes	530	542		180	192		4		4		1.5	0		398,832									
118-F-5	FR2	3	Burial Ground Total																	1,791,582	492,000	0	1,299,582	68,880					
118-F-6	FR2		Burial Ground, CS (L & W Est.)		1	No	440	400	400	240	200	200	20	20	0	0	1.0	0			1,850,667			259,093		Estimated buried volume is 10,000 cu meters or 13,500 cu. yds. of biological, non-reactor related waste.			
118-F-6	FR2	3	Burial Ground Env. Soil		1	Yes	460	400	400	260	200	200	20	20	0	0	1.5	0	68,000	2,052,000									
118-F-6	FR2	3	Burial Ground Overburden		1	Yes	440	452		240	252		4		4		1.5	0		438,912									
118-F-6	FR2	3	Burial Ground Total																	2,490,912	1,850,667	0	640,245	259,093					
118-F-7	FR2		Burial Ground, CS	30	1	No	34	16	16	26	8	8	9	8	1	0	1.0	0			4,068			570		Concrete box with a wooden cover for misc. reactor hardware which is still present.			
118-F-7	FR2	3	Burial Ground Env. Soil		1	Yes	43	16	16	35	8	8	9	8	1	0	1.5	0		6,255					7,355	Overburden Removed by 118-F-6			
118-F-7	FR2	3	Burial Ground Overburden		1	Yes	34	46		26	38		4		4		1.5	0		5,168									
118-F-7	FR2	3	Burial Ground Total																	11,423	4,068	0	0	570	7,355				
118-F-8	FR2	3	Burial Ground, CS (D Est.)		1	No	190	150	150	70	30	30	20	20	0	0	1.0	0			172,667			24,173		Site has been backfilled and is posted as a surface contaminated area. Characterization will establish buried volume			
118-F-8	FR2	3	Burial Ground Env. Soil		1	Yes	210	150	150	90	30	30	20	20	0	0	1.5	0	66,000	290,000									
118-F-8	FR2	3	Burial Ground Overburden		1	Yes	190	202		70	82		4		4		1.5	0		59,632									
118-F-8	FR2	3	Burial Ground Total																	349,632	172,667	0	176,965	24,173					
126-F-1	FR2	3	Burning Pit, CS L, W, & D Est.		1	No	400	360	360	165	125	125	20	20	0	0	1.0	0			1,104,667			154,653					
126-F-1	FR2	3	Burning Pit Env. Soil		1	Yes	420	360	360	165	125	125	20	20	0	0	1.5	0	66,000	1,283,000									
126-F-1	FR2	3	Burning Pit Overburden		1	Yes	400	412		165	177		4		4		1.5	0		277,752									
126-F-1	FR2	3	Burning Pit Total																	1,560,752	1,104,667	0	456,085	154,653					
126-F-2	FR1		Demo and Inert Landfill, CS D Est.		1	No	791	751	751	175	135	135	20	20	0	0	1.0	0			2,392,767			334,967		The unit is currently under the surplus facility program and does not contain either radioactive or hazardous waste			
126-F-2	FR2	3	Demo and Inert Landfill Env. Soil		1	Yes	811	751	751	195	135	135	20	20	0	0	1.5	0	66,000	2,651,300									
126-F-2	FR2	3	Demo and Inert Landfill Overbdn		1	Yes	791	803		175	187		4		4		1.5	0		577,076									
126-F-2	FR2	3	Demo and Inert Landfill Total																	3,228,376	2,392,767	0	835,609	334,967					
128-F-1	FR2	3	Burning Pit, CS		1	No	120	100	100	120	100	100	10	10	0	0	1.0	0			121,333			16,987		Estimated buried volume is 20,000 cu meters or 27,000 cu yds. of waste			
128-F-1	FR2	3	Burning Pit, Env. Soil		1	No	130	100	100	130	100	100	10	10	0	0	1.5	0		133,000									
128-F-1	FR2	3	Burning Pit, Overbdn		1	No	120	132		120	132		4		4		1.5			63,552									
128-F-1	FR2	3	Burning Pit, Total																	196,552	121,333	0	75,219	16,987					
128-F-2	FR1	3	Burning Pit, CS D Est.		1	No	180	150	150	90	60	60	15	15	0	0	1.0	0			186,750			26,145					
128-F-2	FR1	3	Burning Pit, Env. Soil		1	No	195	150	150	105	60	60	15	15	0	0	1.5	0	36,250	254,250									
128-F-2	FR1	3	Burning Pit, Overbdn		1	No	180	192		90	102		4		4		1.5	0		71,472									
128-F-2	FR1	3	Burning Pit, Total																	325,722	186,750	0	138,972	26,145					
128-F-3	FR2		Burning Pit, CS D Est.		1	No	130	100	100	130	100	100	15	15	0	0	1.0	0			199,500			27,930					
128-F-3	FR2	3	Burning Pit, Env. Soil		1	No	145	100	100	145	100	100	15	15	0	0	1.5	0		227,625									
128-F-3	FR2	3	Burning Pit, Overbdn		1	No	130	142		130	142		4		4		1.5	0		74,032									
128-F-3	FR2	3	Burning Pit, Total																	301,657	199,500	0	102,157	27,930					

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100-FR Volumes

Structural Excavation and Waste Plume Dimensions

Site Name	OU	Model Type	Site Type / Category	ε Linear Distance to Closest Waste Site	Number of Units in Waste Site	Disposal Cell Applicable	Y = L1 Top Excavation Length	y2 = Lb Max Contam Length at Bottom	y* DC Length	X = W1 Top Excavation Width	x2 = Wb Max Contam Width at Bottom	x* DC Width	Z Total Depth Below Grade	z1 DC Depth	z3 Overburden Depth or DTBG	z2 Plume Depth Below Waste Unit	m Waste Cell / Excavation Slope	a Lateral Plume Dispersion	Ramp Volume	Total Volume	Contaminated Waste Volume	Other Waste Volumes, See Remarks	Overburden	Demolition Waste Volume	Overlap Overburden Adjustment	Remarks	Subproject Piping Data: Diameter	Length	Volume
600-31	FR2		Dumping Area, CS (Avg Cat. Est.)		1	No	382	376	372	106	104	100	2	0	0	2	1.5	3			79,592			11,143					
600-31	FR2	3	Dumping Area, Exv. Soil		1	No	378	372	372	106	100	100	2	0	0	2	1.5	3		77,256									
600-31	FR2	3	Dumping Area, Overbdn		1	No	382	382		106	106		0		0		1.5	0		0									
600-31	FR2	3	Dumping Area, Total																	77,256	79,592	0	-2,336	11,143					
																				20,861,243	9,965,233	0	10,888,655	1,395,133	7,355				
116-F-4	FR1	1	Crib		1	Yes	79	25	10	79	25	10	16	10	3	5		7.5		53,046	2,625		50,421	368		About 3,000 liters, 793 gallons, or 106 cubic feet of ruptured fuel element coolant water.			
116-F-5	FR1	1	Crib		1	Yes	79	25	10	79	25	10	16	10	3	5		7.5		53,046	2,625		50,421	368		About 4,000 liters, 1,057 gallons, or 141 cubic feet of liquid waste from decontamination of boron steel balls, element coolant water.			
116-F-15	FR1	1	Crib Est.		1	Yes	79	25	10	79	25	10	16	10	3	5		7.5		53,046	2,625		50,421	368					
																				159,138	7,875	0	151,263	1,103	0				
116-F-10	FR1	1	French Drain	65	1	Yes	96	16	3	96	16	3	26	20	1	5	0	7.5		97,656	825		96,831	116	0	About 400,000 liters, 105,660 gallons, or 14,127 cubic feet of water rinses and spent acids from decon of fuel element spacers, etc.			
116-F-11	FR1	1	French Drain		1	Yes	45	16	3	45	16	3	9	3	1	5	0	7.5		9,477	672		8,805	94		About 200,000 liters, 52,840 gallons, or 7,064 cubic feet of cushion corridor decon waste.			
116-F-12	FR1	1	French Drain		1	Yes	54	16	3	54	16	3	12	6	1	5	0	7.5		16,848	699		16,149	98		About 10,000 liters, 2,642 gallons, or 353 cubic feet of radioactive effluent pump prime.			
116-F-13	FR1	1	French Drain		1	Yes	45	16	3	45	16	3	9	3	1	5	0	7.5		9,477	672		8,805	94		About 10,000 liters, 2,642 gallons, or 353 cubic feet of radioactive effluent water. 116-F-3 removes about 340 bcf of the 116-F-6 overburden.			
116-F-7	FR1	1	French Drain		1	Yes	67	19	4	67	19	4	16	10	1	5	0	7.5		32,656	915		31,741	128		About 300,000 liters, 79,300 gallons, or 10,600 cubic feet of short half life radionuclide contaminated fluids.			
																				166,114	3,783	0	162,331	530	0				
116-F-6	FR1	1	Outfall Structure	65	1	Yes	135	42	27	122	29.0	14	31	25	1	5	0	7.5		229,478	13,253		213,711	1,855	2,514	The unit was reduced to near grade, and backfilled with clean soil. Overburden reduced by 2,449 from 116-F-13			
116-F-16	FR1	1	Outfall Structure Dim.-Est		1	Yes	128	47	32	106	25.0	10	27	21	1	5	0	7.5		169,506	10,270		159,236	1,438		The unit extends 20 ft. on the shoreline to 12 ft. in the river. A majority of the structure has been backfilled.			
																				398,984	23,523	0	372,947	3,293	2,514				
132-F-6	FR1	1	Pump Station		1	Yes	136	39	36	136	37	34	33	27	5	1	0	1.5		279,576	34,380		245,196	4,813		The unit was demolished in situ and covered with 16.25 ft of clean soil.			
																				279,576	34,380	0	245,196	4,813	0				
116-F-14	FR1		Retention Basin		1	No	672	584	583.67	600	480.0	480.0	40	0	4	36	0	0	408,000	13,793,110	9,740,421		4,052,690	1,363,659		Concrete structure with 20 ft walls. The unit has been backfilled to -5 ft.			
																				13,793,110	9,740,421	0	4,052,690	1,363,659	0				
1607-F1	FR2		Septic Tank		1	Yes	1040	1015	1000	42	17.33	2.33	8.33	0.33	3	5	0	7.5		255,707	50,381	1,078	204,247	7,204		Plus 1,078 cubic feet the for septic tank			
1607-F2	FR1		Septic Tank		1	Yes	4216	4191	4178	42	17.33	2.33	8.33	0.33	3	5	0	7.5		1,044,759	208,924	4,145	831,691	29,830		Plus 4,145 cubic feet the for septic tank			
1607-F3	FR1		Septic Tank		1	Yes	368	343	328	42	17.33	2.33	8.33	0.33	3	5	0	7.5		86,753	16,838	421	71,497	2,418		Plus 421 cubic feet for the septic tank			
1607-F4	FR1		Septic Tank	104	1	Yes	88	63	48	42	17.33	2.33	8.33	0.33	3	5	0	7.5		19,190	2,856	67	16,264	410	0	Plus 67 cubic feet for the septic tank			
1607-F5	FR1		Septic Tank		1	Yes	88	63	48	42	17.33	2.33	8.33	0.33	3	5	0	7.5		19,190	2,858	67	16,264	410		Plus 67 cubic feet for the septic tank			
1607-F6	FR1		Septic Tank All Dims. Est.		1	Yes	368	343	328	42	17.33	2.33	8.33	0.33	3	5	0	7.5		86,753	16,838	421	71,497	2,418		Plus 421 cubic feet for the septic tank			
																				1,516,352	298,693	6,199	1,211,460	42,885	0				
132-F-4	FR1	3	Burial Ground - Stack, OD - V Est.		1	Yes			300			10.63	10.63	10.63	0	0	0.0	0			33,930			4,750		The reactor stack was buried in a trench and			
132-F-4	FR1	3	Burial Ground - Stack, ID - V Est.		1	Yes			300			7.98	7.98	7.98	0	0	0.0	0			-19,086			-2,672					
132-F-4	FR1	3	Burial Ground Exv. Soil		1	Yes	354	300	300	84	30	30	16	16	0	0	1.5	0	41,310	381,186									
132-F-4	FR1	3	Burial Ground Overburden		1	Yes	354	354	0	84	84	0	0		0		1.5	0		0									
132-F-4	FR1	3	Demolished Building Total																	381,186	14,845	0	366,341	2,078					
																				381,186	14,845	0	366,341	2,078	0				
116-F-1	FR1	2	Trench, CS			Yes	3014	3014	3000	54	54	40	15	7	3	5	1.0	0			963,655			134,912					
116-F-1	FR1	2	Trench Exv. Soil		1	No	3050	3014	3000	99	54	40	15	7	3	5	1.5	0	36,250	3,525,165									
116-F-1	FR1	2	Trench Overburden - Void		1	No	3020	3000		60	40		10				1.0	0		-1,505,333									
116-F-1	FR1	2	Trench Total																	2,019,832	963,655	0	1,056,177	134,912					
116-F-2	FR1	2	Trench, CS		1	No	320	320	300	70	70	50	20	10	5	5	1.0	0			149,667			20,953					
116-F-2	FR1	2	Trench Exv. Soil		1	No	360	320	300	130	70	50	20	10	5	5	1.5	0	68,000	774,000									
116-F-2	FR1	2	Trench Overburden - Void		1	No	330	300		80	50		0				1.0	0		0									
116-F-2	FR1	2	Trench Total																	774,000	149,667	0	624,333	20,953					
116-F-3	FR1	2	Trench, CS (W & D Est.)		1	No	120	120	100	35	35	15	20	10	5	5	1.0	0			35,167			4,923					
116-F-3	FR1	2	Trench Exv. Soil		1	No	180	120	100	95	35	15	20	10	5	5	1.5	0	51,000	252,000									
116-F-3	FR1	2	Trench Overburden - Void		1	No	130	100		45	15		0				1.0	0		0									
116-F-3	FR1	2	Trench Total																	252,000	35,167	0	216,833	4,923					
116-F-4	FR1	2	Trench		1	No	314	314	300	114	114	100	15	7	3	5	1.0	0			199,495			27,929					
116-F-4	FR1	2	Trench Exv Soil		1	No	359	314	300	159	114	100	15	7	3	5	1.5	0	36,250	729,765									
116-F-4	FR1	2	Trench Overburden - Void		1	No	320	300		120	100		0				1.0	0		0									
116-F-4	FR1	2	Trench Total																	729,765	199,495	0	530,270	27,929					

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100-FR Volumes

Structural Excavation and Waste Plume Dimensions

Site Name	OU	Model Type	Site Type / Category	C Linear Distance to Closest Waste Site	Number of Units in Waste Site	Disposal Cell Applicable	Y or L_1 Top Excavation Length	y_2 or L_b Max Contam Length at Bottom	y_1 DC Length	X or W_1 Top Excavation Width	x_2 or W_b Max Contam Width at Bottom	x_1 DC Width	Z Total Depth Below Grade	z_1 DC Depth	z_3 Overburden Depth or DTBC	z_2 Plume Depth Below Waste Unit	m Waste Cell / Excavation Slope	a Lateral Plume Dispersion	Ramp Volume	Total Volume	Contaminated Waste Volume	Other Waste Volumes, See Remarks	Overburden	Demolition Waste Volume	Overlap Overburden Adjustment	Remarks	Diameter	Length	Volume
116-F-9	FR1	2	Trench		1	No	514	514	500	29	29	15	15	7	3	5	1.0	0			100,680			14,095					
116-F-9	FR1	2	Trench Exv. Soil		1	No	558	514	500	74	29	15	15	7	3	5	1.5	0	27,731	444,709									
116-F-9	FR1	2	Trench Overburden – Void		1	No	520	500		35	15		0				1.0	0		0									
116-F-9	FR1	2	Trench Total																	444,709	100,680	0	344,029	14,095					
120-F-1	FR2	2	Trench			No	38	36	30	14	14	8	8	3	1	5	1.0	0			2,834			411					
120-F-1	FR1	2	Trench Exv. Soil		1	No	63	38	30	41	14	8	8	3	1	5	1.5	0		12,798									
120-F-1	FR1	2	Trench Overburden – Void		1	No	38	30		18	8		4				1.0	0		-1,853									
120-F-1	FR1	2	Trench Total																	11,145	2,834	0	8,211	411					
																				4,231,450	1,451,596	0	2,779,854	203,223	0				
UPR-100-F-1	FR1	1	Unplanned Release		1	No	70	55	40	70	55	40	5	0	0	5	1.5	7.5		19,625	11,375		8,250	1,593		The area was stabilized with clean gravel			
																				19,625	11,375	0	8,250	1,593	0				
none			Piping															0		0	0		0	0		Note: Pipeline Volumes are in addition to waste site volumes. Total Volume = [illegible] Contaminated Volume = [illegible] Total Overburden = [illegible] Source Data: Report - UNI-[illegible], Table 2-[illegible], Pg. 22, and Environmental Engineering Calculations Dated 7/[illegible]	2.75	170	2,782
																											5.25	2605	21,[illegible]
																											5.75	2300	25,404
																											[illegible]	50	4,316
																		TOTAL bcf		42,347,285	21,872,315	[illegible]	20,837,872	[illegible]	[illegible]	TOTAL FOOTAGE AND VOLUME		5725	68,122

Note: All volumes are in bank cubic feet (bcf)

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100-HR Volumes

							Structural Excavation and Waste Plume Dimensions																				Subproject Piping Data		
Site Name	OU	Model Type	Model Type	Linear Distance	Number of Units in Waste Site	Disposal Cell Applicable	Y or L_t Top Excavation Length	y_2 or L_b Max Contam Length at Bottom	y_1 DC Length	X or W_t Top Excavation Width	x_2 or W_b Max Contam Width at Bottom	x_1 DC Width	Z Total Depth Below Grade	z_1 DC Depth	z_3 Overburden Depth or DTBG	z_2 Plume Depth Below Waste Unit	m Waste Cell / Excavation Slope	a Lateral Plume Dispersion	Ramp Volume	Total Volume	Contaminated Waste Volume	Other Waste Volumes, See Remarks	Total Non Contaminated Soil	Demolition Waste Volume	Overexcavation, Overburden or Other Adjustment	Remarks	Diameter	Length	Volume
132-H-2	HR2	3	Demolished Building, CS		1	Yes	59	59	59	39	39	39	36	32	4	0	0.0	0			82,836			11,507					
132-H-2	HR2	3	Demolished Building Exv. Soil		1	Yes	167	59	59	147	39	39	36	32	4	0	1.5	0	220,320	633,836									
132-H-2	HR2	3	Demolished Building Overburden		1	Yes	59	59	0	39	39	0	0		0		1.5	0		0									
132-H-2	HR2		Demolished Building Total																	633,836	82,836	0	550,800	11,587	0				
																				633,836	82,836	0	550,800	11,587	0				
116-H-1	HR2	3	Burial Ground, CS		8	No	340	300	300	80	20	20	20	20	0	0	1.0	0			2,328,000			325,920					
116-H-1	HR2	3	Burial Ground, Exv. Soil		1	No	760	700	700	410	350	350	20	20	0	0	1.5	0	88,000	5,622,000									
116-H-1	HR2	3	Burial Ground, Overburden		1	No	740	755		380	405		5		5		1.5	0		1,485,750									
116-H-1	HR2		Burial Ground, Total																	7,107,750	2,328,000	0	4,779,750	325,920	0				
116-H-2	HR2		Burial Ground, CS		1	No	170	140	140	50	20	20	15	15	0	0	1				82,500			11,550					
116-H-5	HR2	3	Burial Ground, Exv. Soil		1	No	185	140	140	85	20	20	15	15	0	0	1.5	0	38,250	144,375									
116-H-5	HR2	3	Burial Ground, Overburden		1	No	170	176		50	56		2		2		1.5	0		18,344									
116-H-2	HR2		Burial Ground, Total																	162,719	82,500	0	80,219	11,550	0				
116-H-3	HR2		Burial Ground, CS		1	No	340	300	300	240	200	200	20	20	0	0	1.0				1,410,867			187,493					
116-H-3	HR2	3	Burial Ground, Exv. Soil		1	No	360	300	300	260	200	200	20	20	0	0	1.5	0	88,000	1,502,000									
116-H-3	HR2	3	Burial Ground, Overburden		1	No	340	352		240	252		4		4		1.5	0		340,512									
116-H-3	HR2		Burial Ground, Total																	1,832,512	1,410,667	0	521,845	187,493	0				
116-H-4	HR2		Burial Ground, CS		1	No	170	150	150	50	30	30	10	10	0	0	1.0	0			64,333			9,007					
116-H-4	HR2	3	Burial Ground, Exv. Soil		1	No	160	150	150	60	30	30	10	10	0	0	1.5	0		75,000									
116-H-4	HR2	3	Burial Ground, Overburden		1	No	170	162		60	72		4		4		1.5	0		46,512									
116-H-4	HR2	3	Burial Ground, Total																	121,512	64,333	0	57,179	9,007	0				
116-H-5	HR2	3	Burial Ground, CS		1	No	70	30	30	50	10	10	20	20	0	0	1.0	1.5			32,667			4,573		WIDS Lists Site as 2 Ft. Deep, however assumed 20			
116-H-5	HR2	3	Burial Ground, Exv. Soil		1	Yes	80	30	30	70	10	10	20	20	0	0	1.5	0	88,000	122,000									
116-H-5	HR2	3	Burial Ground, Overburden		1	Yes	70	85		70	85		5		5		1.5	0		30,125									
116-H-5	HR2		Burial Ground, Total																	152,125	32,667	0	119,454	4,573	0				
JA Jones 2	IU2	3	Burial Ground, CS		1	No	80	30	30	80	30	30	15	15	0	0	1.0	1.5			31,500			4,410					
JA Jones 2	IU2	3	Burial Ground, Exv. Soil		1	Yes	75	30	30	75	30	30	15	15	0	0	1.5	0	34,250	82,125									
JA Jones 2	IU2	3	Burial Ground, Overburden		1	Yes	60	60		75	75		0		0		1.5	0		0									
JA Jones 2	IU2		Burial Ground, Total																	82,125	31,500	0	50,625	4,410	0				
126-H-1	HR2	3	Burning Pit L, W, & D Est.		1	No	400	360	360	165	125	125	20	20	0	0	1.0	0			1,104,667			154,853					
126-H-1	HR2	3	Burning Pit Exv. Soil		1	Yes	420	380	380	165	125	125	20	20	0	0	1.5	0	66,000	1,283,000									
126-H-1	HR2	3	Burning Pit Overburden		1	Yes	400	412		165	187		4		4		1.5	0		310,232									
126-H-1	HR2		Burning Pit Total																	1,593,232	1,104,667	0	488,565	154,653	0				
126-H-2	HR2	3	Demo and Inert Landfill, CS D Est.		1	No	791	751	751	175	135	135	20	20	0	0	1.0	0			2,392,767			334,987		The unit is currently under the surplus facility program and does not contain either radioactive or hazardous waste.			
126-H-2	HR2	3	Demo and Inert Landfill Exv. Soil		1	Yes	811	751	751	195	135	135	20	20	0	0	1.5	0	66,000	2,851,300									
126-H-2	HR2	3	Demo and Inert Landfill Overbdn		1	Yes	791	803		195	207		4		4		1.5	0		640,836									
126-H-2	HR2		Demo and Inert Landfill Total																	3,292,136	2,392,767	0	899,369	334,987	0				
128-H-1	HR2	3	Burning Pit, CS		1	No	120	100	100	120	100	100	10	10	0	0	1.0	0			121,333			16,987					
128-H-1	HR2	3	Burning Pit, Exv. Soil		1	No	130	100	100	130	100	100	10	10	0	0	1.5	0		133,000									
128-H-1	HR2	3	Burning Pit, Overbdn		1	No	120	132		120	132		4		4		1.5	0		63,552									
128-H-1	HR2		Burning Pit, Total																	196,552	121,333	0	75,219	16,987	0				
128-H-2	HR2	3	Burning Pit, CS (D Est.)		1	No	140	120	120	100	80	80	10	10	0	0	1.0	0			117,333			16,427					
128-H-2	HR2	3	Burning Pit, Exv. Soil		1	No	150	120	120	110	80	80	10	10	0	0	1.5	0		120,000									
128-H-2	HR2	3	Burning Pit, Overbdn		1	No	140	152		100	112		4		4		1.5	0		61,952									
128-H-2	HR2		Burning Pit, Total																	190,952	117,333	0	73,619	16,427	0				
128-H-3	HR2	3	Burn. Pit, CS (Sim to 128-H-2)		1	No	140	120	120	100	80	80	10	10	0	0	1.0	0			117,333			16,427					
128-H-3	HR2	3	Burning Pit, Exv. Soil		1	No	150	120	120	110	80	80	10	10	0	0	1.5	0		120,000									
128-H-3	HR2	3	Burning Pit, Overbdn		1	No	140	152		100	112		4		4		1.5	0		61,952									
128-H-3	HR2	3	Burning Pit, Total																	190,952	117,333	0	73,619	16,427	0				
628-1	IU2	3	Burning Pit Est. as 628-3		1	No	270	250	250	80	40	40	10	10	0	0	1.0	0			130,333			18,247		See Dimensions = 1/4 Acre			
628-1	IU2	3	Burial Ground Exv. Soil		1	No	280	250	250	70	40	40	10	10	0	0	1.5	0		146,500									
628-1	IU2	3	Burial Ground - Void Space		1	No	270	250		80	72		4		4		1.5	0		68,560									
628-1	IU2		Burial Ground Total																	215,060	130,333	0	84,727	18,247	0				
600-5	IU2	3	Dumping Area, CS Avg Cat Est.		1	No	13	13	13.3	13	13	13.3	2	2	0	0	0.0	0			353			49					
600-5	IU2	3	Dumping Area, Exv. Soil		1	No	19	13	13.3	19	13	13	2	2		0	1.5	0		537									
600-5	IU2	3	Dumping Area, - Void Space		1	No	270	250		13	13		0		0		1.5	0		0									
600-5	IU2		Dumping Area, Total																	537	353	0	184	49	0				
E. White Bluffs City Landfill	IU2	3	Landfill, CS		1	No	120	100	100	120	100	100	10	10	0	0	1.0	0			121,333			16,987					
E. White Bluffs City Landfill	IU2	3	Landfill, Exv. Soil		1	No	130	100	100	130	100	100	10	10	0	0	1.5	0		133,000									
E. White Bluffs City Landfill	IU2	3	Landfill, - Void Space		1	No	270	250		120	120		0		0		1.5	0		0									
E. White Bluffs City Landfill	IU2		Landfill, Total																	133,000	121,333	0	11,667	16,987	0				
White Bluffs Landfill	IU2	3	Landfill, CS		1	No	145	125	125	70	50	50	10	10	0	0	1.0	0			81,333			11,387					
White Bluffs Landfill	IU2	3	Landfill, Exv. Soil		1	No	155	125	125	80	50	50	10	10	0	0	1.5	0		91,750									
White Bluffs Landfill	IU2	3	Landfill, - Void Space		1	No	270	250		70	70		0		0		1.5	0		0									
White Bluffs Landfill	IU2		Landfill, Total																	91,750	81,333	0	10,417	11,387	0				
																				15,462,914	8,136,453	0	7,326,461	1,139,103	0				
116-H-4	HR1	1	Cab		1	Yes	70	10	4	70	10	4	17	2	10	5	0	7.5		37,349	755		0	106	36,594	The site was exhumed and sent to the 118-H-5 burial ground, however the soil below the unit may not have been removed and still could contain hazardous materials / wastes. All of the overburden will be removed by 132-			
116-H-6	HR1	1	Cab			Yes	73	25	10	73	25	10	16	10	1	5	0	7.5		41,468	1,625		36,863	228					
																				78,837	2,340	0	39,863	333	36,594				

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100-HR Volumes

Site Name	OU	Model Type	Model Type	Linear Distance	Number of Units in Waste Site	Disposal Cell Applicable	Structural Excavation and Waste Plume Dimensions Y or L_t Top Excavation Length	y_2 or L_b Max Contam Length at Bottom	y_1 DC Length	X or W_t Top Excavation Width	x_2 or W_b Max Contam Width at Bottom	x_1 DC Width	Z Total Depth Below Grade	z_1 DC Depth	z_3 Overburden Depth or OTBC	z_2 Plume Depth Below Waste Unit	m Waste Cell / Excavation Slope	a Lateral Plume Dispersion	Ramp Volume	Total Volume	Contaminated Waste Volume	Other Waste Volumes, See Remarks	Total Non Contaminated Soil	Demolition Waste Volume	Overlap Overburden or Other Adjustment	Remarks	Subproject Piping Data Diameter	Length	Volume
116-H-3	HR1	1	French Drain, CS		2	Yes	81	18	3	81	18	3	21	15	1	5		7.5			1,425		-1,425	200		Calculate as one waste site by changing individual width to one diameter plus the distance between.			
116-H-3	HR1	1	French Drain, Overburden	23	1	Yes	104	41	3	104	41	3	21	15	1	5		7.5		117,327	3,157		114,170	442					
																				117,327	4,582	0	112,745	641	0				
116-H-5	HR1	1	Outlet Structure D Est.		1	Yes	123	42	27	110	20.0	14	27	21	1	5		7.5		169,574	11,741		157,833	1,644					
																				169,574	11,741	0	157,833	1,644	0				
132-H-3	HR1		Pump Station	32	1	Yes	162	51	36	160	40.0	34	37	32	0	5		7.5		449,772	48,288		401,484	6,760		An overlap condition may. Soil testing of the former 116-H-4 should be done at the same time as remediation of this unit. 116-H-4 is included in 132-H-3, and adds about 288 bcf of contaminated soil.			
																				449,772	48,288	0	401,484	6,760	0				
116-H-7	HR1		Retention Basin		1	No	880	752	751.56	890	569.4	569.75	40	0	4	36	0	0	408,000	20,743,288	15,415,274		5,328,014	2,156,134					
																				20,743,288	15,415,274	0	5,328,014	2,156,134	0				
116-H-4	HR1	1a	Retention Basin (183H) Flc Bsn			No	191	147	132	82	48	33	14.5	9.5	0	5	1.5	7.5			28,343			3,964		All soil within the disposal cell is clean fill.			
116-H-4	HR1	1a	Retention Basin (183H) Sub Bsn			No	284	221	206	206	143	126	21	16	0	5	1.5	7.5			144,740			20,264		Total area 26,400 square feet.			
116-H-4	HR1	1a	Retention Basin (183H) Ovrbn.		1	Yes	284	225	210.0	210	147	132	21	16	0	5	1.5	7.5	74,970	1,043,406									
																				1,043,406	173,083	0	870,324	24,232	0				
1607-H2	HR1	1	Septic Tank		1	Yes	368	343	326	42	17.33	2.33	8.33	0.33	3	5	0	7.5		88,753	16,836	421	71,497	2,416		Plus 421 cubic feet for the septic tank			
1607-H3	HR2	1	Septic Tank		1	Yes	640	615	600	42	17.33	2.33	8.33	0.33	3	5	0	7.5		206,018	40,397	561	165,060	5,734		Plus 561 cubic feet for the septic tank			
1607-H4	HR1	1	Septic Tank		1	Yes	84	63	48	42	17.33	2.33	8.33	0.33	3	5	0	7.5		19,190	2,858	67	16,264	410		Plus 67 cubic feet for the septic tank			
1607-H1	HR2	1	Septic Tank Est. Size		1	Yes	368	343	326	42	17.33	2.33	8.33	0.33	3	5	0	7.5		88,753	16,836	421	71,497	2,416		Plus 421 cubic feet for the septic tank			
																				402,715	76,828	1,470	324,317	10,976	0				
132-H-1	HR1	3	Burial Ground - Stack, OD - V Exc.		1	Yes			200			10.635	10.635	10.635	0	0	0	0			22,620			3,167		Most probable contamination plume is zero			
132-H-1	HR1	3	Burial Ground - Stack, ID - V Exc.		1	Yes			200			7.976	7.976	7.976	0	0	0.0	0			-12,724			-1,781					
132-H-1	HR1	3	Burial Ground Exv. Soil		1	Yes	254	200	200	84	30	30	18	18	0	0	1.5	0	41,310	278,586									
132-H-1	HR1	3	Burial Ground Overburden		1	Yes	254	254	0	84	84	0	0		0		1.5	0		0									
132-H-1	HR1	3	Demolished Building Total																	278,586	9,896	0	268,690	1,385					
																				278,586	9,896	0	268,690	1,385	0				
116-H-1	HR1	2	Trench, CS		1	No	220	220	200	45	45	25	26	10	5	11	1.0	1.5			134,067			18,769					
116-H-1	HR1	2	Trench Exv. Soil		1	No	298	220	200	123	45	25	26	10	5	11	1.5	0	114,920	693,758									
116-H-1	HR1	2	Trench Overburden – Void		1	No	245	200		70	25		0		2		1.5	0		0									
116-H-1	HR1	2	Trench Total																	693,758	134,067	0	559,691	18,769					
116-H-2	HR1	2	Trench, CS			No	315	315	275	140	140	100	11	4	2	5	5	7.5			254,767			35,667		The Unit received 600,000,000 liters, 158,520,476 gallons, or 21,191,105 cubic feet of reactor coolant via the 116-H-7 retention basin.			
116-H-2	HR1	2	Trench Exv Soil		1	No	348	315	275	173	140	100	11	4	2	5	1.5	0		571,676									
116-H-2	HR1	2	Trench Overburden – Void		1	No	293	275		118	100		6		2		1.5	0		-185,898									
116-H-2	HR1	2	Trench Total																	385,778	254,767	0	131,011	35,667					
																				1,079,536	388,833	0	690,702	54,437	0				
none			Piping			No												0		0	0		0	0		Note: Pipeline Volumes are in addition to waste site volumes.	1.17	350	376
																				40,450,598	24,350,254	1,470	16,071,233	3,409,247	36,594	Total Volume = 14,408,496	1.35	1090	2,622
																										Contaminated Volume = 3,503,952	5.5	4400	104,540
																										Total Overburden = 10,904,544			
																										Source Data: Report: UNI-2533, Table 2-7, Pg. 22, and Environmental Engineering Calculations Dated 7/92.			
																										TOTAL FOOTAGE AND VOLUME		5840	107,538

Note: All volumes are in bank cubic feet (bcf)

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Structures and Waste Plume Dimensions / Subproject Piping Data

Site Name	OU	Model Type	Site Type / Category	Linear Distance	Number of Units in Waste Site	Disposal Cell Applicable	Y or L_1 Top Excavation Length	y_2 or L_b Max Contam Length at Bottom	y_1 DC Length	X or W_1 Top Excavation Width	x_2 or W_b Max Contam Width at Bottom	x_1 DC Width	Z Total Depth Below Grade	z_1 DC Depth	z_3 Overburden Depth or DTBG	z_2 Plume Depth Below Waste Unit	m Waste Cell / Excavation Slope	a Lateral Plume Dispersion	Ramp Volume	Total Volume	Contaminated Waste Volume	Buried Waste as Stated in WIDS	Overburden	Demolition Waste Volume	Overlap Overburden Adjustment	Remarks	Diameter	Length	Volume
118-K-1	KR2	3	Burial Ground, CS		15	No	600	560	560	60	20	20	20	20	0	0	1.0	0			7,000,000			980,000					
118-K-1	KR2	3	Burial Ground Exv. Soil		1	Yes	1260	1200	1200	860	800	800	20	20	0	0	1.5	0	88,000	15,572,000									
118-K-1	KR2	3	Burial Ground Overburden		1	Yes	1240	1252		840	852		4		4		1.5	0		3,219,712									
118-K-1	KR2	3	Burial Ground Total																	18,791,712	7,000,000	0	11,791,712	980,000					
128-K-1	KR3	3	Burning Pit, CS		1	No	120	100	100	120	100	100	10	10	0	0	1.0	0			121,333			16,987					
128-K-1	KR3	3	Burning Pit, Exv. Soil		1	Yes	130	100	100	130	100	100	10	10	0	0	1.5	0		133,000									
128-K-1	KR3	3	Burning Pit, Overburden		1	Yes	120	132		120	132		4		4		1.5	0		63,552									
128-K-1	KR3	3	Burning Pit, Total																	196,552	121,333	0	75,219	16,987					
128-K-2	KR3	3	Burning Pit, CS D - Exc.		1	No	840	800	800	320	280	280	20	20	0	0	1.0	0			4,922,667			689,173					
128-K-2	KR3	3	Burning Pit, Exv. Soil		1	Yes	880	800	800	340	280	280	20	20	0	0	1.5	0	84,000	5,220,000									
128-K-2	KR3	3	Burning Pit, Overburden		1	Yes	840	840		320	320		0		0		1.5	0		0									
128-K-2	KR3	3	Burning Pit, Total																	5,220,000	4,922,667	0	297,333	689,173					
600-4	KR3	3	Military Installation, CS		1	No	502	502	500	435	437	435	1	0	0	1	0.0	1.5			218,872			30,642		Old Military area = 3 – 5 acres			
600-4	KR3	3	Military Installation, Exv. Soil		1	No	503	500	500	438	435	435	1	0	0	1	1.5	1.6		218,906									
600-4	KR3	3	Military Installation, Overbdn		1	No	502	502		435	435		0		0		1.5	0		0									
600-4	KR3	3	Military Installation, Total																	218,906	218,872	0	34	30,642					
600-29	KR3	3	Dumping Area, CS		1	No	2004	2002	2,000	1002	1002	1,000	1	0	0	1	1.0	1.5			2,007,006			280,981		The release potential is negligible			
600-29	KR3	3	Dumping Area, Exv. Soil		1	No	2003	2000	2000	1003	1000	1000	1	0	0	1	1.5	1.5		2,004,503									
600-29	KR3	3	Dumping Area, Overbdn		1	No	2004	2004		1002	1002		0		0		1.5	0		0									
600-29	KR3	3	Dumping Area, Total																	2,004,503	2,007,006	0	-2,503	280,981					
126-K-1	KR2	3	Demolition and Inert Landfill, CS		1	No	440	400	400	265	225	225	20	20	0	0	1.0	0			2,060,667			288,493					
126-K-1	KR2	3	Demolition and Inert Landfill, ES		1	No	460	400	400	285	225	225	20	20	0	0	1.5	0	68,000	2,267,000									
126-K-1	KR2	3	Demolition and Inert Landfill, Obdn		1	No	440	452		265	277		4		4		1.5	0		483,512									
126-K-1	KR2	3	Dumping Area, Total																	2,750,512	2,060,667	0	689,845	288,493					
																				29,192,185	16,330,545	0	12,851,646	2,286,276	0				
116-K-1	KR1	2	Crib/Trench, CS		1	Yes	344	200	200	344	200	200	31	18	4	5	4	7.5			1,354,912			190,248					
116-K-1	KR1	2	Crib/Trench, Exv. Soil		1	No	592	344	200	592	344	200	31	18	8	5	4	0	163,370	7,111,899									
116-K-1	KR1	2	Crib/Trench, – Void		1	No	408	200		200	200		0	0	0			0		0									
116-K-1	KR1	2	Crib/Trench, Total																	7,111,899	1,358,912	0	5,753,087	190,248					
116-KE-1	KR2	2	Crib, CS		1	Yes	29	6	6	29	6	6	31	18	4	5	0.65	7.5			13,420			1,879					
116-KE-1	KR2	2	Crib, Exv. Soil		1	No	122	29	6	122	29	6	31	18	8	5	1.5	0	163,370	364,298									
116-KE-1	KR2	2	Crib, Overburden – Void		1	No	40	6		40	6		26	18	8		1.5	0		-4,957									
116-KE-1	KR2	2	Crib, Total																	359,341	13,420	0	345,922	1,879					
116-KE-2	KR2	1	Crib		1	Yes	142	31	16	142	31	16	37	32	0	5	0.0	7.5		314,833	11,047		303,786	1,547					
116-KW-1	KR2	2	Crib, CS		1	Yes	29	6	6	29	6	6	31	18	4	5	0.65	7.5			13,420			1,879					
116-KW-1	KR2	2	Crib, Exv. Soil		1	No	125	29	6	125	29	6	32	18	6	5	1.5	0	174,060	390,360									
116-KW-1	KR2	2	Crib, Overburden – Void		1	No	41	6		41	6		27	18	9		1.5	0		-5,915									
116-KW-1	KR2	2	Crib, Total																	384,445	13,420	0	371,025	1,879					
																				8,170,618	1,396,798	0	6,773,820	195,552	0				
120-KE-1	KR3		French Drain		1	Yes	49	19	4	49	19	4	10	4	1	5		7.5		12,310	819		11,491	115					
120-KE-2	KR2		French Drain		1	Yes	45	18	3	45	18	3	9	3	1	5		7.5		9,477	672		8,805	94					
120-KW-1	KR3		French Drain		1	Yes	49	19	4	49	19	4	10	4	1	5		7.5		12,310	819		11,491	115					
120-KW-2	KR3		French Drain		1	Yes	45	18	3	45	18	3	9	3	1	5		7.5		9,477	672		8,805	94					
																				43,574	2,982	0	40,592	417	0				
116-K-3	KR1		Outfall Structure			Yes	125	47	32	125	47	32	26	20	1	5		7.5		205,478	28,375		177,103	3,973					
																				205,478	28,375	0	177,103	3,973	0				
116-KE-4	KR1	1	Retention Basin		1	No	1187	1047	939	750	629.8	522	40	0	4	36		54	408,000	30,602,546	20,626,230		9,976,315	2,867,672					
116-KW-3	KR1	1	Retention Basin		1	No	1187	1047	939	750	629.8	522	40	0	4	36		54	408,000	30,602,546	20,626,230		9,976,315	2,867,672					
																				61,205,091	41,252,460	0	19,952,631	5,775,344	0				
116-KE-3	KR2	1	Reverse Well		1	Yes	135	33	17.7	135	32.7	17.7	34	29	0	5		7.5	196,520	464,333	3,275		461,058	459		The unit is 78 feet deep, however assume that waste plume extends 5 feet below the drain field, which is at 29 below grade			
116-KW-2	KR2	1	Reverse Well		1	Yes	135	33	17.7	135	32.7	17.7	34	29	0	5		7.5	196,520	464,333	3,275		461,058	459		The unit is 78 feet deep, however assume that waste plume extends 5 feet below the drain field, which is at 29 below grade			
																				928,666	6,550	0	922,115	917	0				
1607-K1	KR3	1	Septic Tank		1	Yes	160	135	120	42	17.33	2.33	8.33	0.33	3	5		7.5		37,077	6,453	105	30,520	918		Capacity 525 gal / d -- 15 people capacity			
1607-K2	KR3	1	Septic Tank		1	Yes	120	95	80	42	17.33	2.33	8.33	0.33	3	5		7.5		27,140	4,456	70	22,614	634		Capacity 350 gal / d -- 10 people capacity			
1607-K3	KR3	1*	Storage Tank - All Dims. Estimated		1	Yes	160	135	120	42	17.33	2.33	8.33	0.33	3	5		7.5		37,077	6,453	105	30,520	918		Capacity 525 gal / d -- 15 people capacity			
1607-K4	KR2	1*	Storage Tank - All Dims. Estimated		1	Yes	160	135	120	42	17.33	2.33	8.33	0.33	3	5		7.5		37,077	6,453	105	30,520	918		Capacity 525 gal / d -- 15 people capacity			
1607-K5	KR3	1	Septic Tank		1	Yes	200	175	160	42	17.33	2.33	8.33	0.33	3	5		7.5		47,015	8,449	140	38,426	1,203		Capacity 700 gal / d -- 20 people capacity			
1607-K6	KR2	1*	Storage Tank - All Dims. Estimated		1	Yes	160	135	120	42	17.33	2.33	8.33	0.33	3	5		7.5		37,077	6,453	105	30,520	918		Capacity 525 gal / d -- 15 people capacity			
																				222,465	38,716	630	183,119	5,508	0				

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100-KR Volumes

Structural and Waste Plume Dimensions

Site Name	OU	Model Type	Site Type / Category	Linear Distance	Number of Units in Waste Site	Disposal Cell Applicable	Y or L_1 Top Excavation Length	y_2 or L_b Max Contam Length at Bottom	y_1 DC Length	X or W_1 Top Excavation Width	x_2 or W_b Max Contam Width at Bottom	x_1 DC Width	Z Total Depth Below Grade	z_1 DC Depth	z_3 Overburden Depth or DTBG	z_2 Plume Depth Below Waste Unit	m Waste Cell / Excavation Slope	a Lateral Plume Dispersion	Ramp Volume	Total Volume	Contaminated Waste Volume	Burned Waste as Stated in WIDS	Overburden	Demolition Waste Volume	Overlap Overburden Adjustment	Remarks	Subproject Piping Data Diameter	Length	Volume
120-KE-6	KR3	1*	Storage Tank - All Dims. Estimated		1	Yes	70	25	10	70	25	10	15	10	0	5		7.5		36,375	2,625		33,750	366					
120-KE-8	KR2	1	Brine Tank		1	Yes	73	31	16	67	25	10	14	9	0	5		7.5		35,546	3,590		31,956	503		Plus 4 ft. Dia Valve Pit			
120-KE-9	KR3	1	Brine Tank	20	1	Yes	83	38	23	77	32	17	15	10	0	5		7.5		51,890	7,740		35,596	1,084	8,654	Overburden of 8,654 removed by 116-KE-2			
120-KW-5	KR3	1*	Storage Tank - All Dims. Estimated		1	Yes	70	25	10	70	25	10	15	10	0	5		7.5		36,375	2,625		33,750	366					
120-KW-6	KR2	1	Brine Tank		1	Yes	73	31	16	67	25	10	14	9	0	5		7.5		35,546	3,590		31,956	503		Plus 4 ft. Dia Valve Pit			
120-KW-7	KR3	1	Brine Tank		1	Yes	92	38	23	86	32	17	18	10	3	5		7.5	55,080	126,484	7,740		120,744	1,084					
130-K-1	KR2	1*	Storage Tank - All Dims. Estimated		1	Yes	78	24	9	88	34	19	18	10	3	5		7.5	55,080	115,452	3,990		111,462	559		Gasoline Storage – Assumes the tank is underground and side-by-side with 130-KE-4			
130-K-2	KR2	1*	Storage Tank - All Dims. Estimated	0	1	Yes	78	24	9	74	24	9	18	10	3	5		7.5	55,080	106,272	2,265		0	317	104,007	Used motor oil storage – Assumes the tank is underground and contributes only contaminated waste volume, as the overburden is picked up by 130-K-1			
130-K-3	KR3	1*	Storage Tank - All Dims. Estimated		1	Yes	94	43	28	75	24	9	17	9	3	5		7.5	49,130	110,458	5,291		105,167	741		Tank storage capacity was 17,500 gallons			
130-KE-1	KR2	1*	Storage Tank - All Dims. Estimated from Capacity	7	1	Yes	65	26	11	59	20	5	13	5	3	5		7.5		25,012	1,525		0	214	23,487	Tank storage capacity was 2,000 gallons, Overburden of 23,487 removed by UPR-100-K-1			
130-KE-2	KR2	1*	Storage Tank - All Dims. Estimated from Capacity		1	Yes	65	26	11	59	20	5	13	5	3	5		7.5		25,012	1,525		23,487	214		Tank storage capacity was 2,000 gallons			
130-KW-1	KR2	1*	Storage Tank - All Dims. Estimated from Capacity		1	Yes	65	26	11	59	20	5	13	5	3	5		7.5		25,012	1,525		23,487	214		Tank storage capacity was 2,000 gallons o			
130-KW-2	KR2	1*	Storage Tank - All Dims. Estimated from Capacity		1	Yes	65	26	11	59	20	5	13	5	3	5		7.5		25,012	1,525		23,487	214		Tank storage capacity was 2,000 gallons or			
																				756,446	45,556	0	574,842	6,378	136,148				
116-K-2	KR1	2	Trench		1	No	4045	4045	4,000	49	49	4	20	15	0	5	1.5	0			2,362,625			330,766					
116-K-2	KR1	2	Trench Exv. Soil		1	No	4105	4045	4000	109	49	4	20	15	0	5	1.5	0	88,000	6,512,500									
116-K-2	KR1	2	Trench Overburden – Void		1	No	4045	4000		49	4		0		0		1.5	0		0									
116-K-2	KR1	2	Trench Total																	6,512,500	2,362,625	0	4,149,875	330,766					
120-KE-3	KR3	2	Trench		1	Yes	44	44	40	7	7	3	8	2	1	5	1.0	0			1,733			243					
120-KE-3	KR3	2	Trench Exv. Soil		1	No	68	44	40	31	7	3	8	2	1	5	1.5	0		8,896									
120-KE-3	KR3	2	Trench Overburden – Void		1	No	46	40		9	3		0		0		1.0	0		0									
120-KE-3	KR3	2	Trench Total																	8,896	1,733	0	7,163	243					
																				6,521,396	2,364,358	0	4,157,038	331,010	0				
UPR-100-K-1	KR2	1*	Unplanned Release - All Dims. Estimated from Spill Rate		1	No	133	115	100	133	115.0	100	8	0	1	5		7.5		92,418	57,875		34,543	8,103		Area below the fuel storage basin, no action can be taken at this time.			
																				92,418	57,875	0	34,543	8,103	0				
none			Piping															0		0	0		0	0		Note: Pipeline Volumes are in addition to waste site volumes.			
																				107,328,436	61,524,216	430	45,667,443	8,813,478	136,148	Total Volume = 51,702,975			
																										Contaminated Volume = 13,175,919			
																										Total Overburden = 38,527,056			
																										Source Data, Report: UNI-2333, Table 2-7, Pg. 22, and Environmental Engineering Calculations Dated 7/92.			
																										TOTAL FOOTAGE AND VOLUME		21960	310,905

Subproject Piping Data

Diameter	Length	Volume
1.17	6010	6,462
1.75	410	986
3.25	6725	55,791
6.5	6380	127,624
7	2600	100,063
5.5	435	10,639
	21960	310,905

* Dimensional data not available

Note: All volumes are in bank cubic feet (bcf)

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100-NR Volumes

Site Name	OU	Model Type	Model Type	Linear Distance	Number of Units in Waste Site	Disposal Cell Applicable	Y or L_1 Top Excavation Length	y_2 or L_b Max Contam Length at Bottom	y_1 DC Length	X or W_1 Top Excavation Width	X_2 or W_b Max Contam Width at Bottom	x_1 DC Width	Z Total Depth Below Grade	z_1 DC Depth	z_3 Overburden Depth or DTBG	z_2 Plume Depth Below Waste Unit	m Waste Cell / Excavation Slope	d Lateral Plume Dispersion	Ramp Volume	Total Volume	Contaminated Waste Volume	Other Waste Volumes, See Remarks	Total Non Contaminated Soil	Demolition Waste Volume	Overlap Overburden or Other Adjustment	Remarks	Subproject Piping Data: Diameter	Length	Volume
128-N-1	NR1	3	Burning Pit - Avg. Cat Est		1	No	400	360	360	165	125	125	20	20	0	0	1.0	0			1,104,867			154,653					
128-N-1	HR-2	3	Burning Pit, Exv. Soil		1	No	420	380	380	185	125	125	20	20	0	0	1.5	0	86,000	1,263,000									
128-N-1	HR-2	3	Burning Pit, Overdon		1	No	400	412		165	177		4		4		1.5	0		277,752									
128-N-1	HR-2	3	Burning Pit, Total																	1,560,752	1,104,667	0	456,085	154,653					
800-32	NR1	3	Dumping Area - Contaminated Soil		1	No	1402	1402	1400	1000	1002	1000	2	1	0	1	0.0	1.5			2,806,804			392,953					
800-32	IU-2	3	Dumping Area, Exv. Soil		1	No	1403	1400	1400	1006	1000	1000	2	1	0	1	1.5	1.5		2,811,412									
800-32	IU-2	3	Dumping Area, - Void Space		1	No	1402	1402		1000	1000		0		0		1.5	0		0									
800-32	IU-2	3	Dumping Area, Total																	2,811,412	2,806,804	0	4,608	392,953					
800-35	NR1	3	TT&SF - Contaminated Soil		1	Yes	302	302	300	300	302	300	2	1	0	1	0.0	1.5			181,804			25,453					
800-35	IU-2	3	TT&SF, Exv. Soil		1	No	303	300	300	300	300	300	0	1	0	1	1.5	1.5		0									
800-35	IU-2	3	TT&SF, - Void Space		1	No	302	302		300	300		0		0		1.5	0		0									
800-35	IU-2	3	TT&SF, Total																	0	181,804	0	-181,804	25,453					
																				4,372,164	4,093,275	0	278,889	573,058	0				
116-N-1	NR1	1	Crib - CS		1	Yes	356	305	280	191	140.0	125	17	12	0	5	0	7.5		933,547	632,188			88,506					
116-N-1	NR1	2	Crib – Extension Trench, CS		1	Yes	1816	1816	1800	86	66	50	17	6	4	5	1.0	0			640,245			89,634					
116-N-1	NR1	2	Trench Exv. Soil		1	No	1867	1816	1800	117	66	50	17	6	4	5	1.5	0	40,130	2,806,188					0				
116-N-1	NR1	2	Trench Overburden – Void		1	No	1824	1800		74	50		12	6	4		1.0	0		-1,199,904									
116-N-1	NR1	2	Trench Total																	2,339,811	1,272,433	0	1,067,378	178,141	0				
116-N-3	NR1		Crib - CS		1	Yes	301	265	250	291	255.0	240	12	7	0	5		7.5		928,404	736,750			103,425					
116-N-3	NR1		Crib – Extension Trench, CS		1	Yes	3010	3010	3000	20	20	10	12	5	2	5	1.0	0			376,543			52,722					
116-N-3	NR1	2	Trench Exv. Soil		1	No	3044	3010	3000	58	20	10	12	5	2	6	1.5	0		1,382,064					0				
116-N-3	NR1	2	Trench Overburden – Void		1	No	3014	3000		24	10		7	5	2		1.0	0		-357,947									
116-N-3	NR1	2	Trench Total																	1,852,521	1,115,333	0	837,187	154,147	0				
																				4,292,331	2,387,766	0	1,904,565	334,287	0				
120-N-3	NR1	1	French Drain - Avg. Cat Est		1	Yes	49	19	4	49	19	4	10	4	1	5		7.5		12,310	819		11,491	115					
120-N-6	NR1	1	French Drain - Avg. Cat Est	121	1	Yes	49	19	4	49	19	4	10	4	1	5		7.5		12,310	819		11,491	115	0	No overlap with UPR-100-N-33			
120-N-7	NR1	1	French Drain - Avg. Cat Est		1	Yes	49	19	4	49	19	4	10	4	1	5		7.5		12,310	819		11,491	115					
120-N-8	NR1	1	French Drain - Avg. Cat Est	25	1	Yes	49	19	4	49	19	4	10	4	1	5		7.5		12,310	819		9,667	115	1,824	Overburden Removed by 120-N-3			
																				48,240	3,276	0	44,140	459	1,824				
120-N-2	NR1	1	Neutralization Unit, Dim Based on Capacity	100	1	Yes	151	55	40	151	55.0	40	32	27	0	5		7.5	174,080	538,144	54,575		241,866	7,641	241,701	324,000 gal capacity. Overburden reduced by 241,701 from 120-N-1			
120-N-5	NR1	1	Neutralization Unit, Dim Based on		1	Yes	49	19	4	49	19.0	4	10	4	1	5		7.5		12,310	819		11,491	115					
																				550,454	55,394	0	253,359	7,755	241,701				
130-N-1	NR1		Pond - Cat Est as 120-D-1		1	No	521	511	511.23	566	511.76	511.23	18.3	15	0	3.3		0	56,931	1,228,343	862,924		365,420	120,809					
120-N-1	NR1		Pond		1	No	185	170	170	245	511.76	170	25	20	0	5		0	106,250	1,198,979	289,749		909,230	40,565		Unit subject to closure under RCRA. Site Area 29,000 Square Feet Estimated			
																				2,427,322	1,152,672	0	1,274,650	161,374	0				
124-N-1	NR1	1	Septic Tank		1	Yes	360	335	320	42	17.33	2.33	8.33	0.33	3	5		7.5		86,766	16,436	281	70,049	2,340		1400 gal / d capacity – 40 people			
124-N-2	NR1	1	Septic Tank		1	Yes	86	61	46	42	17.33	2.33	8.33	0.33	3	5		7.5		18,893	2,759	461	15,473	451					
124-N-3	NR1	1	Septic Tank		1	Yes	49	19	4	49	19	4	10	4	1	5		7.5		12,310	819	67	11,424	124					
124-N-4	NR1	1	Septic Tank		1	Yes	6897	6872	6857	42	17.33	2.33	8.33	0.33	3	5		7.5		1,710,833	342,756	2,807	1,365,270	48,379					
124-N-5	NR1	1	Septic Tank		1	Yes	909	884	869	42	17.33	2.33	8.33	0.33	3	5		7.5		223,161	43,842	742	178,577	6,242					
124-N-6	NR1	1	Septic Tank		1	Yes	298	273	258	42	17.33	2.33	8.33	0.33	3	5		7.5		71,363	13,341	401	57,620	1,924					
124-N-7	NR1	1	Septic Tank		1	Yes	1229	1204	1189	42	17.33	2.33	8.33	0.33	3	5		7.5		302,662	59,816	1,504	241,342	8,585					
124-N-8	NR1	1	Septic Tank		1	Yes	246	221	206	42	17.33	2.33	8.33	0.33	3	5		7.5		58,444	10,746	1,002	46,696	1,645					
124-N-9	NR1	1	Septic Tank		1	Yes	543	518	503	42	17.33	2.33	8.33	0.33	3	5		7.5		132,231	25,572	602	106,057	3,664					
124-N-10	NR1	1	Sewer		1	Yes	11474	11447	11432	44	17.33	2.33	9	4	0	5		7.5		3,180,492	668,891	6,686	2,504,914	94,581		50,000 gal / d capacity – 1429 people			
																				5,796,853	1,184,978	14,553	4,597,422	167,934	0				
118-N-1	NR1	1	Silo, CS - D Est.		3	Yes	74	29	14.2	74	29	14.2	15	10	0	5		7.5			13,364		-13,364	1,871					
118-N-1	NR1	3	Silos, Exv. Soil		1	No	123	78	78.0	59	14	14.2	15	10	0	5	1.5	7.5	38,250	96,076									
118-N-1	NR1	3	Silos, - Void Space		1	No	108	78		44	14		0		0		1.5	0		0									
118-N-1	NR1	3	Silos, Total																	96,076	13,364	0	82,713	1,871					
116-N-4	NR1	1	Storage Tank, Dimensional Estimate Based on Tank Capacity		1	No	205	145	130	155	95	80	20	15	0	5		7.5	66,000	511,500	60,250		451,250	8,435		1,000,000 gallon capacity, assumes that the tank is in ground and empty			
116-N-2	NR1	1	Storage Tank - Avg. Cat Est		1	Yes	73	25	10	73	25	10	16	10	1	5		7.5	27,200	68,688	2,625		66,063	368					
																				676,264	76,239	0	600,026	10,673	0				
																										Note: No Overlap calculations done for the 100-N UPR's due to their close proximity with operating units			
UPR-100-N-1	NR1	1	Unplanned Release	17	1	No	43	25	10	48	30	15	6	1	0	5		7.5		8,118	2,063		6,056	249					
UPR-100-N-10	NR1	1	Unplanned Release		1	No	43	25	10	43	25	10	6	1	0	5		7.5		7,096	1,625		5,473	228					
UPR-100-N-11	NR1	1	Unplanned Release		1	No	23	17	14	23	17	14	2	1	0	1		1.5		806	241		565	34		Radiation contamination 8 cu yds. removed			
UPR-100-N-12	NR1	1	Unplanned Release	0	1	No	36	18	3	35	17	2	6	1	0	5		7.5		4,374	593		3,782	83		Radiation contamination removed and replaced with clean backfill			
UPR-100-N-13	NR1	1	Unplanned Release	21	1	No	20	11	4.5	20	10.5	4.5	3	1	0	2		3		695	119		577	17		Radiation contamination removed and replaced with clean backfill			
UPR-100-N-14	NR1	1	Unplanned Release		1	No	61	43	28	61	43	28	6	1	0	5		7.5		16,386	6,395		9,991	895		Radiation contamination removed and replaced with clean backfill			
UPR-100-N-15	NR1	1	Unplanned Release		1	No	40	22	7	40	22	7	6	1	0	5		7.5		5,926	1,145		4,763	160		Radiation contamination removed and replaced with clean backfill			

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100-NR Volumes

Site Name	OU	Model Type	Model Type	Linear Distance	Number of Units in Waste Site	Disposal Cell Applicable	Y or L_1 Top Excavation Length	y_2 or L_b Max Contam. Length at Bottom	y_1 DC Length	X or W_1 Top Excavation Width	X_2 or W_b Max Contam. Width at Bottom	X_1 DC Width	Z Total Depth Below Grade	z_1 DC Depth	z_3 Overburden Depth or OTBG	z_2 Plume Depth Below Waste Unit	m Waste Cell / Excavation Slope	a Lateral Plume Dispersion	Ramp Volume	Total Volume	Contaminated Waste Volume	Other Waste Volumes See Remarks	Total Non Contaminated Soil	Demolition Waste Volume	Overlap Overburden or Other Adjustment	Remarks	Subsurface Piping Data: Diameter	Length	Volume
										Structural Excavation and Waste Plume Dimensions																			
UPR-100-N-17	NRI	1	Unplanned Release, Dimensions Based on Average of Defined Spills		1	No	51	33	19.04	50	30.96	17.46	6.25	1.75	0	4.5		6.75		10,750	2,878		7,872	403		60,000 gallons of diesel fuel released to the ground.			
UPR-100-N-18	NRI	1	Unplanned Release, Dimensions Based on Average of Defined Spills		1	No	51	33	19.04	50	30.96	17.46	6.25	1.75	0	4.5		6.75		10,750	2,878		7,872	403		Line leakage, 757 liters, 200 gallons, or 26.8 cu ft. of diesel. Line repaired yes, soil cleaned ?			
UPR-100-N-19	NRI	1	Unplanned Release, Dimensions Based on Average of Defined Spills		1	No	51	33	19.04	50	30.96	17.46	6.25	1.75	0	4.5		6.75		10,750	2,878		7,872	403		Tank overfilled. 7570 liters, 2000 gallons, or 267 cubic feet of diesel spilt to ground. Soil and impoundment area was cleaned up.			
UPR-100-N-2	NRI	1	Unplanned Release	0	1	No	77	32	17	77	32	17	15	10	0	5		7.5		47,085	3,095		43,990	433		Leak repaired, and accessible contaminated soil was removed and replaced with clean soil.			
UPR-100-N-20	NRI	1	Unplanned Release, Dimensions Based on Average of Defined Spills		1	No	51	33	19.04	50	30.96	17.46	6.25	1.75	0	4.5		6.75		10,750	2,878		7,872	403		Line leakage, 757 liters, 200 gallons, or 26.8 cu ft. of diesel. Line repaired yes, soil cleaned ?			
UPR-100-N-21	NRI	1	Unplanned Release, Dimensions Based on Average of Defined Spills	0	1	No	51	33	19.04	50	30.96	17.46	6.25	1.75	0	4.5		6.75		10,750	2,878		7,872	403		Tank overfilled, 3028 liters, 800 gallons, or 107 cubic feet of diesel spilt to ground. Soil and impoundment area was cleaned up, and applicable repair was made.			
UPR-100-N-22	NRI	1	Unplanned Release, Dimensions Based on Average of Defined Spills	0	1	No	51	33	19.04	50	30.96	17.46	6.25	1.75	0	4.5		6.75		10,750	2,878		7,872	403		Line leakage, 3785 liters, 1000 gallons, or 133.7 cu ft. of diesel. Line repaired yes, soil cleaned ?			
UPR-100-N-23	NRI	1	Unplanned Release, Dimensions Based on Average of Defined Spills	0	1	No	51	33	19.04	50	30.96	17.46	6.25	1.75	0	4.5		6.75		10,750	2,878		7,872	403		Line leakage, 757 liters, 200 gallons, or 26.8 cu ft. of diesel. Line excavated yes, soil cleaned ?			
UPR-100-N-24	NRI	1	Unplanned Release, Dimensions Based on Average of Defined Spills		1	No	51	33	19.04	50	30.96	17.46	6.25	1.75	0	4.5		6.75		10,750	2,878		7,872	403		Number 6 fuel oil in unknown quantity leaked during transfer. Corrective action taken ?			
UPR-100-N-25	NRI	1	Unplanned Release, Dimensions Based on Average of Defined Spills	0	1	No	51	33	19.04	50	30.96	17.46	6.25	1.75	0	4.5		6.75		10,750	2,878		7,872	403		1301-N tank vented causing, 1892 liters, 500 gallons, or 66.8 cu ft. of radioactive effluent to be leaked to the ground. Localized contamination covered with 6" of			
UPR-100-N-28	NRI	1	Unplanned Release, Dimensions Based on Average of Defined Spills		1	No	51	33	19.04	50	30.96	17.46	6.25	1.75	0	4.5		6.75		10,750	2,878		7,872	403		Line leakage, 3785 liters, 1000 gallons, or 133.7 cu ft. of radioactive effluent to be leaked to the bottom of the valve pit. The solution was absorbed and shipped to 200 area burial?			
UPR-100-N-29	NRI	1	Unplanned Release		1	No	63	45	30	37	19	4	6	1	0	5		7.5		8,234	2,250		6,984	315		Check valve leakage, 378 liters, 100 gallons, or 13.5 cu ft. of primary coolant water. Contaminated soil removed and covered with clean fill.			
UPR-100-N-3	NRI	1	Unplanned Release	0	1	No	42	19	4	42	19	4	7.5	2.5	0	5		7.5		7,179	755		6,424	106		The line was repaired and the contaminated soil was removed. The sink hole was backfilled and covered with clean soil.			
UPR-100-N-30	NRI	1	Unplanned Release	0	1	No	83	65	50	83	65	50	6	1	0	5		7.5		33,016	16,625		16,393	2,328		An emergency Dump Tank overflowed spilling 9464 liters, 2,497 gallons, or 334.25 cu ft. of primary coolant water. Contaminated soil stabilized in place and covered with clean fill.			
UPR-100-N-31	NRI	1	Unplanned Release	73	1	No	78	60	45	78	60	45	6	1	0	5		7.5		28,728	13,875		14,853	1,943		Check valve leakage, 3785 liters, 1000 gallons, or 134.8 cu ft. of radioactive effluent was leaked from the 1304-N Tank Crib. Some contaminated soil was removed and the area was covered with clean fill. Not enough			
UPR-100-N-32	NRI	1	Unplanned Release, Dimensions Based on Average of Defined Spills	0	1	No	51	33	19.04	50	30.96	17.46	6.25	1.75	0.00	4.50		6.75		10,750	2,878		7,872	403		Check valve leakage, 3785 liters, 1000 gallons, or 134.8 cu ft. of radioactive effluent was leaked from the 116-N-1 Crib. Contaminated soil removed and covered with clean fill.			
UPR-100-N-33	NRI	1	Unplanned Release, Dimensions Based on Average of Defined Spills	0	1	No	51	33	19.04	50	30.96	17.46	6.25	1.75	0	4.5		6.75		10,750	2,878		7,872	403		About 3785 liters, 1000 gallons, or 134.8 cu ft. of 97% sulfuric acid was leaked while transferring from a rail car. Contaminated soil neutralized in place using sodium hydroxide and soda ash.			
UPR-100-N-34	NRI	1	Unplanned Release, Dimensions Based on Average of Defined Spills		1	No	51	33	19.04	50	30.96	17.46	6.25	1.75	0	4.5		6.75		10,750	2,878		7,872	403		About 12870 liters, 3400 gallons, or 454.5 cu ft. of 94% sulfuric acid was leaked while being transferred. Contaminated soil neutralized in place using sodium hydroxide and soda ash, and some was pumped to a nearby clear well.			
UPR-100-N-35	NRI	1	Unplanned Release, Dimensions Based on Average of Defined Spills	140	1	No	51	33	19.04	50	30.96	17.46	6.25	1.75	0	4.5		6.75		10,750	2,878		7,872	403		A sub-basin drain line about 25 ft. below grade leaked radioactive water during the feed and bleed cycle of the 100-N Fuel Basin. The weir and drain line was sealed off, no further contamination has been detected in the groundwater.			
UPR-100-N-4	NRI	1	Unplanned Release		1	No	72	54	39	72	54	39	6	1	0	5		7.5		23,978	10,905		13,071	1,527		Sump overflow, 5678 liters, 1500 gallons, or 200.5 cu ft. of radioactive water was leaked. Most contaminated soil removed and covered with clean fill. Not enough data to determine			
UPR-100-N-5	NRI	1	Unplanned Release, Dimensions Based on Average of Defined Spills	70	1	No	51	33	19.04	50	30.96	17.46	6.25	1.75	0	4.5		6.75		10,750	2,878		7,872	403		Piping, 340,686 liters, 90,010 gallons, or 12,032 cu ft. of radioactive wastewater was leaked. Contaminated soil with a count of >1000 ct/min was removed and thesite was covered with clean fill.			
UPR-100-N-6	NRI	1	Unplanned Release, Dimensions Based on Average of Defined Spills		1	No	51	33	19.04	50	30.96	17.46	6.25	1.75	0	4.5		6.75		10,750	2,878		7,872	403		Piping, 6,814 liters, 1,800 gallons, or 240.6 cu ft. of radioactive water was leaked. The line was repaired, contaminated soil with a count of 7000 to 25000 ct/min was removed in 4 locations and the excavation was backfilled and covered with clean fill.			
UPR-100-N-7	NRI	1	Unplanned Release, Dimensions Based on Average of Defined Spills	97	1	No	51	33	19.04	50	30.96	17.46	6.25	1.75	0	4.5		6.75		10,750	2,878		7,872	403		Piping, 1,907,842 liters, 504,053 gallons, or 67,382 cu ft. of radioactive effluent water was leaked. About 1,130 cu ft. of contaminated soil was removed and site monitoring has not detected any above level readings in the groundwater.			

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100-YR Volumes

Site Name	OU	Model Type	Model Type	Linear Distance	Number of Units in Waste Site	Disposal Cell Applicable	Y or L_1 Top Excavation Length	y_2 or L_b Max Contam. Length at Bottom	y_1 DC Length	X or W_1 Top Excavation Width	X_2 or W_b Max Contam. Width at Bottom	X_1 DC Width	Z Total Depth Below Grade	z_1 DC Depth	z_3 Overburden Depth or DTBG	z_2 Plume Depth Below Waste Unit	m Waste Cell / Excavation Slope	a Lateral Plume Dispersion	Ramp Volume	Total Volume	Contaminated Waste Volume	Other Waste Volumes, See Remarks	Total Non Contaminated Soil	Demolition Waste Volume	Overlap Overburden or Other Adjustment	Remarks	Subproject Piping Data: Diameter	Length	Volume
UPR-100-N-6	NR1	1	Unplanned Release	0	1	No	38	20	5	38	20	5.00	6	1.00	0	5		7.5		5,206	675		4,333	123		Sump overflow, 379 liters, 100 gallons, or 13.4 cu ft. of radioactive water was leaked. Most contaminated soil removed and covered with clean fill. Not enough data to determine			
UPR-100-N-9	NR1	1	Unplanned Release, Dimensions Based on Average of Defined Spills	0	1	No	51	33	19.04	50	30.96	17.46	6.25	1.75	0	4.5		6.75		10,750	2,478		7,872	403		Piping. 8,328 liters, 2,200 gallons, or 294.1 cu ft. of radioactive water was leaked. The line was repaired, contaminated soil was removed and the excavation was backfilled and covered with clean fill.			
UPR-600-17	NR1	1	Unplanned Release, Dimensions Based on Average of Defined Spills		1	No	51	33	19.04	50	30.96	17.46	6.25	1.75	0	4.5		6.75		10,750	2,878		7,872	403		Not close to any other waste site. Releasing about 266 liters, 70 gallons, or 7.48 cu ft. of gasoline was leaked inside a patrol boat and subsequently pumped to the shoreline.			
																				402,877	115,243	0	286,834	16,134	0				
none			Piping																										
																			bcf	[illegible]	[illegible]	14,663	[illegible]	[illegible]	[illegible]	Note: Piping Volumes are in addition to waste site volumes. Total Volume = [illegible] Contaminated Volume = [illegible] Total Overburden = [illegible] Source: [illegible] Pg. 22, [illegible] Environmental Engineering Calculations Dated 7/92. TOTAL FOOTAGE AND VOLUME	Reactor Dia. 2.005208	5800	17,665
																												5800	17,665

Note: All volumes are in Bank Cubic Feet (bcf)

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300 Area Vitrification Test Site	FF2	3	TT&SF - Contam. Soil		1	Yes	0	0		0	0		0	
300 Area Vitrification Test Site	FF2	3	TT&SF Exc. Soil		1	Yes	0	0		0	0		0	
300 Area Vitrification Test Site	FF2	3	TT&SF Overburden		1	Yes	0	0	0	0	0	0	0	
300 Area Vitrification Test Site	FF2	3	TT&SF Total											
			Category Average and/or Subtotal						0					
618-1	FF2	3	Burial Ground Trenches, Contam Soil		3	No	216	200	200	80	0	0	8	8
618-1	FF2	3	Burial Ground Pits, Contam Soil		2	No	120	80	80	66	16	16	20	20
618-1	FF2	3	Burial Ground Exc. Soil		1	No	366	320	320	166	160	160	12	12
618-1	FF2	3	Burial Ground Overburden		1	No	320	332		160	162		4	
618-1	FF2	3	Burial Ground Total											
618-13	FF2	3	Burial Ground Contam Soil		1	No	126	78	78	60	0	0	60	60
618-13	FF2	3	Burial Ground Exc. Soil		1	No	79	129	79	0	82	0	64	60
618-13	FF2	3	Burial Ground Overburden		1	No	126	128	0	60	60	0	0	
618-13	FF2	3	Burial Ground Total											
618-2	FF2	3	Burial Ground Contam Soil		4	No	196	160	160	61	6	6	16	16
618-2	FF2	3	Burial Ground Exc. Soil		1	No	396	350	360	260	218	218	16	16
618-2	FF2	3	Burial Ground Overburden		1	No	360	362		218	227		4	
618-2	FF2	3	Burial Ground Total											
618-3	FF2	3	Burial Ground Contam Soil		1	No	360	360	360	196	166	166	16	16
618-3	FF2	3	Burial Ground Exc. Soil		1	No	396	360	360	210	166	168	16	16
618-3	FF2	3	Burial Ground Overburden		1	No	360	362		166	177		4	
618-3	FF2	3	Burial Ground Total											
618-7	FF2	3	Burial Ground Contam Soil		2	No	1120	1084	1084	262	226	226	12	12
618-7	FF2	3	Burial Ground Exc. Soil		1	No	1186	1120	1120	666	660	660	12	12
618-7	FF2	3	Burial Ground Overburden		1	No	1120	1132	0	660	662	0	4	
618-7	FF2	3	Burial Ground Total											
618-8	FF2	3	Burial Ground Contam Soil		8	No	100	70	70	48	18	16	16	16
618-8	FF2	3	Burial Ground Exc. Soil		1	No	648	600	600	146	100	100	16	16
618-8	FF2	3	Burial Ground Overburden		1	No	600	600	0	100	100	0	0	
618-8	FF2	3	Burial Ground Total											
618-9	FF2	3	Burial Ground Contam Soil		1	No	160	160	160	40	10	10	16	16
618-9	FF2	3	Burial Ground Exc. Soil		1	No	196	180	160	66	10	10	16	16
618-9	FF2	3	Burial Ground Overburden		1	No	160	192	0	40	52	0	4	
618-9	FF2	3	Burial Ground Total											
600-22 (UFO Landing Site) EST.	FF2	3	Dumping Area - CS		1	No	100	104	100	104	104	100	2	0
600-22 (UFO Landing Site)	FF2	3	Dumping Area Exc. Soil		1	No	110	104	100	110	104	100	2	0
600-22 (UFO Landing Site)	FF2	3	Dumping Area Overbdn		1	No	840	840		440	440		0	
600-22 (UFO Landing Site)	FF2	3	Dumping Area Total											
618-6	FF3	3	Burial Ground - Tank, CS		1	No	0.000	0.000		0.000	0.000		0	
618-6	FF3	3	Burial Ground Exc. Soil		1	No	0	0		0	0		0	
618-6	FF3	3	Burial Ground Overburden		1	No	0	0		0	0		0	
618-6	FF3	3	Burial Ground Total											
300-1	FF3	3	Dumping Area Contam Soil		3	No	18	16	10	19	11	8	7	4
300-1	FF3	3	Dumping Area Exc. Soil		3	No	22	10	10	26	6	6	7	4
300-1	FF3	3	Dumping Area Overburden		1	No	18	36		19	37		8	
300-1	FF3	3	Dumping Area Total											
400-1	FF4	3	Dumping Area Contam Soil – Est.		1	No	104	104	100	104	104	100	2	
400-1	FF4	3	Dumping Area Exc. Soil		1	No	106	104	100	106	104	100	2	
400-1	FF4	3	Dumping Area Overburden		1	No	104	104		104	104		0	
400-1	FF4	3	Dumping Area Total											
600-1	UJ1	3	Dumping Area Contam Soil		1	No	91	89	89	91	89	89	1	1
600-1	UJ1	3	Dumping Area Exc. Soil		1	No	92	88	89	92	89	89	1	1
600-1	UJ1	3	Dumping Area Overburden		1	No	91	91		91	91		0	
600-1	UJ1	3	Dumping Area Total											
618-10	UJ1	3	Burial Ground Contam Soil, Lg Trench		6	No	320	320	320	70	70	70	26	26
618-10	UJ1	3	Burial Ground Contam Soil, Sm Trench		6	No	60	60	60	40	40	40	26	26
618-10	UJ1	3	Burial Ground Contam Soil, Silos (96)		96	No	1.77	1.77	1.77	1.77	1.77	1.77	16	16
618-10	UJ1	3	Burial Ground Exc. Soil		1	No	676	600	600	676	600	600	26	26
618-10	UJ1	3	Burial Ground Overburden		1	No	320	320		70	70		0	
618-10	UJ1	3	Burial Ground Total											
618-11	UJ1	3	Burial Ground Contam Soil		3	No	930	900	900	80	80	80	15	15
618-11	UJ1	3	Burial Ground Contam Soil, Caissons (10)		10	No	10	10	10	7.09	7.09	7.08	7	7.09
618-11	UJ1	3	Burial Ground Contam Soil, Silos (54)		54	No	1.77	1.77	1.77	1.77	1.77	1.77	16	16
618-11	UJ1	3	Burial Ground Exc. Soil		1	No	1046	1000	1000	420	376	376	16	16
618-11	UJ1	3	Burial Ground Overburden		1	No	1046	1046		420	420		0	
618-11	UJ1	3	Burial Ground Total											
JA Jones 1	UJ1	3	Landfill Contam Soil		1	No	120	100	100	70	80	90	10	10
JA Jones 1	UJ1	3	Landfill Exc. Soil		1	No	130	100	100	60	60	60	10	10
JA Jones 1	UJ1	3	Landfill Overburden		1	No	120	120		70	70		0	
JA Jones 1	UJ1	3	Landfill Total											
			Category Average and/or Subtotal						6					
316-4	UJ1	1	Crib		2	Yes	99	33	16.00	66	22	7.09	22	7
			Category Average and/or Subtotal						16.00					
400 Area French Drain 10	FF4	1	French Drain			Yes	66	19	3.64	66	19	3.64	13	6
400 Area French Drain 10A	FF4	1	French Drain			Yes	66	19	3.54	56	19	3.64	13	5
400 Area French Drain 1A	FF4	1	French Drain			Yes	66	19	3.64	66	19	3.64	13	6
400 Area French Drain 1B	FF4	1	French Drain			Yes	66	19	3.64	66	19	3.64	13	6
400 Area French Drain 2	FF4	1	French Drain			Yes	58	19	3.84	58	19	3.54	13	5
400 Area French Drain 3	FF4	1	French Drain			Yes	88	19	3.64	56	19	3.64	13	6
400 Area French Drain 4	FF4	1	French Drain			Yes	66	19	3.64	64	19	3.64	13	8

	0	0.0	0			0			0		No probable waste volume. All waste at the Test Site have been removed, site surveyed, and cleared.
	0	1.5	0		0						
		1.5	0		0						
					0	0	0	0	0	0	
					0	0	0	0	0	0	
	0	1.0	0			126,400			17,896		
	0	1.0	0			146,333			20,347		
	0	1.5	0	0	662,704						
4		1.5	0		203,472						
					866,176	271,733	0	614,443	38,043		
	0	0.5	0			136,917			19,026		This site is an above ground mound.
2	0	0.5	0		167,716						
0		0.5	0		0						
					167,716	136,917	0	21,799	19,026		
	0	1.5	0			306,100			42714		Site was interim stabilized in 1989
	0	1.5	0	34,250	1,347,813						
4		1.5	0		314,752						
					1,662,566	306,100	0	1,377,466	42,714		
	0	1.0	0			966,626			136,126		Site was interim stabilized in 1989
	0	1.5	0	34,250	1,088,434						
4		1.5	0		243,562						
					1,331,990	986,625	0	345,365	136,126		
	0	1.5	0			6,455,904			903627		This site contains both solid and drummed liquid waste.
	0	1.5	0	0	9,123,504						
4		1.5	0		2,964,672						
					12,078,176	6,455,904	0	5,622,272	903,627		
	0	1.00	0			315,000			44,100		
	0	1.5	0	34,250	1,164,625						
0		1.5	0		0						
					1,164,625	315,000	0	849,625	44,100	0	
	0	1.00	0			63,000			8,820		This site was excavated under an Expedited Response Action.
	0	1.5	0	34,250	124,875					0	
4		1.5	0		34,272						
					159,147	63,000	0	96,147	8,820		
	2	1.0	2			21,216			2,970		
	2	1.5	3	0	22,904						
	0	1.5	0		0						
					22,904	21,216	0	1,688	2,970		
	0	0.00	0			0			0		The waste site contents have been moved to the 618-10 burial ground, no action required for this waste site.
	0	1.5	0	0	0						
		1.5	0		0						
					0	0	0	0	0		
	3	1.0	3			3,076			431		Three pits used for maintenance repairs, they have received liquid wastes to soil.
	3	1.5	4.5	0	1,883						
0		1.5	0		0						
					1,883	3,076	0	-1,193	431		
	2	1.0	2			21,632			3,028		
	2	1.5	3	0	22,061						
		1.5	0		0						
					22,061	21,632	0	419	3,028	0	
	0	1.0	6			8,033			1,125		
	0	1.5	5		8,123						
		1.5	0		0						
					8,123	8,033	0	90	1,125		
	0	8.0	0			3,360,000			470,400		
						300,000					
						4,524					
	0	1.5	0	106,250	7,340,625						
		1.5	0		0						
					7,340,625	3,664,524	0	3,676,101	470,400		
	0	1.00	0			2,679,750			375,165		
		0.0				5,027					
		0.0				2,546					
	0	1.5	0	34,250	6,137,438						
		1.5	0		0						
					6,137,438	2,687,321	0	3,450,118	375,165		
	0	1.00	0			66,333			9,287		
	0	1.5	0	0	75,500						
		1.5	0		0						
					75,500	66,333	0	9,167	9,287		
					31,[illegible],817	15,905,118	0	15,[illegible]	2,[illegible]	0	
10	6	0	7.6	82,280	67,977	2,647		65,129	399		
					67,977	2,647	0	65,129	399	0	
3	6		7.6		20,464	767		19,694	107		
3	5		7.6		20,464	767		19,694	107		
3	6		7.6		20,464	767		19,694	107		
3	6		7.6		20,464	767		19,694	107		
3	6		7.6		20,464	767		19,694	107		
3	6		7.6		20,464	767		19,694	107		
3	6		7.6		20,464	767		19,694	107		

400 Area French Drain 6	FF4	1	French Drain			Yes	66	19	3.84	66	19	3.84	13	6
400 Area French Drain 6	FF4	1	French Drain			Yes	66	19	3.84	66	19	3.84	13	6
400 Area French Drain 7	FF4	1	French Drain			Yes	66	19	3.84	66	19	3.84	13	6
400 Area French Drain 8	FF4	1	French Drain			Yes	66	19	3.84	66	19	3.84	13	6
400 Area French Drain 9	FF4	1	French Drain			Yes	66	19	3.84	66	19	3.84	13	6
400 Area Retired French Drains, EST.	FF4	1	French Drain			Yes	66	19	3.84	66	19	3.84	13	6
403 French Drain	FF4	1	French Drain			Yes	66	19	3.84	56	19	3.84	13	6
4713-B French Drain	FF4	1	French Drain			Yes	66	19	3.84	66	19	3.84	13	6
4721 French Drain	FF4	1	French Drain			Yes	66	19	3.84	66	19	3.84	13	6
4722-B French Drain	FF4	1	French Drain			Yes	66	19	3.84	66	19	3.84	13	6
4722-C French Drain	FF4	1	French Drain			Yes	66	19	3.84	56	19	3.84	13	6
			Category Average and/or Subtotal						#REF!					
307 Retention Basin (From 300-FF-1)	FF3	1	Retention Basin		1	Yes	61	36	36	61	36.0	36	16	9
316 Retired Sanitary Drain Field, Est.	FF3	1	Septic Tank			Yes	1040	1016	1000	42	17.33	2.33	8.33	0.33
331 LSL Drain Field	FF3	1	Septic Tank			Yes	66	40	25	42	17.33	2.33	8.33	0.33
334 & 335 Retired Sanitary Drain Fields	FF3	1	Septic Tank			Yes	1040	1016	1000	42	17.33	2.33	8.33	0.33
300 Area Retired RLWS (From 300-FF-1)	FF3	1	Septic Tank			Yes	4124	4077	4062	64	17.33	2.33	16.6	6.6
300 Area RLWS and 340 Complex (From 300-FF-1) ROM EST.	FF3	1	Septic Tank			Yes	1041	1016	1000	43	17.33	2.33	6.6	6.6
400 Area Sanitary Sewer	FF4	1	Septic Tank			Yes	3464	3439	3424	42	17.33	2.33	8.33	0.33
400 Area Sanitary Tile Field, Est.	FF4	1*	Septic Tank			Yes	1040	1016	1000	42	17.33	2.33	8.33	0.33
400 Area Retired Septic Tanks, Est.	FF4	1*	Septic Tank			Yes	1040	1016	1000	42	17.33	2.33	8.33	0.33
			Category Average and/or Subtotal						#REF!			#REF!		#REF!
309-TW-1	FF3	3	Burial Ground - Tank		2	No	10	10	10.0	6	6	6.0	6	6.4
309-TW-1	FF3	3	Burial Ground Exc. Soil		1	No	66	20	20.0	63	16	18.0	22	18.6
309-TW-1	FF3	3	Burial Ground Overburden		1	No	66	94		63	92		3	
309-TW-1	FF3	3	Burial Ground Total											
309-TW-2	FF3	3	Burial Ground - Tank		2	No	10	10	10.0	6	6	6.0	9	6.6
309-TW-2	FF3	3	Burial Ground Exc. Soil		1	No	66	20	20.0	63	16	18.0	22	18.6
309-TW-2	FF3	3	Burial Ground Overburden		1	No	66	94		63	92		3	
309-TW-2	FF3	3	Burial Ground Total											
309-TW-3	FF3	3	Burial Ground - Tank		2	No	10	10	10.0	8	8	8.0	7	7.0
309-TW-3	FF3	3	Burial Ground Exc. Soil		1	No	60	20	20.0	78	16	16.0	20	17.0
309-TW-3	FF3	3	Burial Ground Overburden		1	No	60	89		78	67		3	
309-TW-3	FF3	3	Burial Ground Total											
			Category Average and/or Subtotal											
316-3 (From 300-FF-1)	FF3	2	Trench		1	No	490	490	460	83	63	13.33	26	20
316-3 (From 300-FF-1)	FF3	2	Trench Exc. Soil		1	No	866	490	460	136	60	20	26	20
316-3 (From 300-FF-1)	FF3	2	Trench Overburden - Void		1	No	900	460		70	20		20	
316-3 (From 300-FF-1)	FF3	2	Trench Total											
331 LSL Trench 1, Est	FF3	2m	Trench		1	No	28	28	20	12	12	4	11	4.00
331 LSL Trench 1	FF3	2m	Trench Exc. Soil		1	No	61	28	20	46	12	4	11	4.00
331 LSL Trench 1	FF3	2m	Trench Overburden - Void		1	No	42	20		26	4		6	
331 LSL Trench 1	FF3	2m	Trench Total											
331 LSL Trench 2, Est	FF3	2m	Trench		1	No	28	26	20	12	12	4	11	4.00
331 LSL Trench 2	FF3	2m	Trench Exc. Soil		1	No	61	26	20	48	12	4	11	4.00
331 LSL Trench 2	FF3	2m	Trench Overburden - Void		1	No	42	20		26	4		6	
331 LSL Trench 2	FF3	2m	Trench Total											
400 Area Process Pond and Sewer System, Est	FF4	2m	Pond		1	No	84	54	50	84	64	60	11	2
400 Area Process Pond and Sewer System	FF4	2m	Pond Exc. Soil		1	No	87	54	60	87	64	60	11	2
400 Area Process Pond and Sewer System	FF4	2m	Pond Overburden - Void		1	No	72	60		72	60		6	
400 Area Process Pond and Sewer System	FF4	2m	Pond Total											
400 Area Retired Sanitary Pond, Est.	FF4	2m			1	No	47	47	46	47	47	46	10	1
400 Area Retired Sanitary Pond	FF4	2m	Pond Exc. Soil		1	No	77	47	46	77	47	46	10	1
400 Area Retired Sanitary Pond	FF4	2m	Pond Overburden - Void		1	No	66	46		66	46		6	
400 Area Retired Sanitary Pond	FF4	2m	Pond Total											
400 Area Sand Bottom Trench, Est.	FF4	2m			1	No	58	58	50	13	13	6	11	4
400 Area Sand Bottom Trench	FF4	2m	Pond Exc. Soil		1	No	91	58	50	46	13	5	11	4
400 Area Sand Bottom Trench	FF4	2m	Pond Overburden - Void		1	No	72	60		27	3		6	
400 Area Sand Bottom Trench	FF4	2m	Pond Total											
			Category Average and/or Subtotal											
UPR-300-1 (From 300-FF-1)	FF3	1	Unplanned Release		1	No	154.63	79.63	10.63	164.63	79.63	10.63	26.00	8.00
UPR-300-10	FF3		Unplanned Release, Dimensions Based on Average of Defined Spills		1	No	84.29	34.04	19.04	82.71	32.46	17.46	6.76	1.75
UPR-300-11 (From 300-FF-1)	FF3		Unplanned Release		1	No	69	24	3	68	23	2	16	0
UPR-300-12	FF3		Unplanned Release		1	No	70	66	40	31	16	1	6	0
UPR-300-13	FF3		Unplanned Release, Dimensions Based on Average of Defined Spills		1	No	84.29	34.04	19.04	82.71	32.46	17.46	6.76	1.76

3	6		7.5		20,464	767		19,696	107			
3	6		7.5		20,464	767		19,696	107			
3	6		7.5		20,464	767		19,696	107			
3	6		7.5		20,464	767		19,696	107			
3	6		7.5		20,464	767		19,696	107			
3	6		7.5		20,464	767		19,696	107			
3	6		7.5		20,464	767		19,696	107			
3	6		7.5		20,464	767		19,696	107			
3	6		7.5		20,464	767		19,696	107			
3	6		7.5		20,464	767		19,696	107			
3	6		7.5		20,464	767		19,696	107			
					343,234	13,734	0	334,434	4,527	0		
0	16	0.0	0	344,864	442,719	19,440		423,279	2,722			
					Drain Field Volumes							
3	6	0	7.5		286,707	80,341	1,076	204,247	7,204			
3	6	0	7.5		13,476	1,710	64	11,761	246			
3	6	0	7.5		286,707	80,341	1,076	204,247	7,204			
10	6	0	7.5	344,864	2,841,809	204,843	3,734	2,373,229	30,201		[illegible] 6 tank diameter piping	
3	6	0	7.5		263,234	60,777	6,600	203,864	8,313		Insufficient information to develop detailed volumes, assumes 43 ea 200 gallon tanks and about 1000 feet of leaching piping	
3	6	0	7.5		227,831	171,344	3,736	2,992	24,817		16,000 per day or 426 person capacity	
3	6	0	7.5		286,707	80,341	1,076	204,247	7,204			
3	6	0	7.5		286,707	80,341	1,076	204,247	7,204			
#REF!	#REF!				3,731,378	430,734	20,462	3,466,120	81,847	0		
	0	0.0	0			1,344			166		Most probable contaminated plume is zero, tank capacity is 8026 gallons. Tanks are in a concrete underground vault.	
3	6	1.5	0	344,864	463,467						Added 10 feet to all dimension for vault.	
3		1.5	0		23,408							
					476,864	1,344	0	476,821	166			
	0	0.0	0			1,376			193		Most probable contaminated plume is zero, tank capacity is 6141 gallons. Tanks are in a concrete underground vault	
3	6	1.5	0	344,864	463,467						Added 10 feet to all dimension for vault.	
3		1.5	0		23,408							
					476,864	1,376	0	476,486	193			
	0	0.0	0			1,120			167		Most probable contaminated plume is zero, tank capacity is 4166 gallons. Tanks are in a concrete underground vault	
3	0	1.5	0	344,864	442,864						Added 10 feet to all dimension for vault.	
3		1.0	0		20,934							
					463,788	1,120	0	462,668	167			
					3,417,820	3,840	0	[illegible]	433	0		
	5	1.0	5			377,233			82,813			
	6	1.5	0	344,864	1,646,364							
6.67		1.0	0		-431,667							
					1,254,667	377,233	0	877,466	82,813			
2	6	1.0	6			2,234			313			
2	5	1.5	0		14,949							
0		1.0	0		-3,032							
					11,917	2,234	0	8,682	313			
2	5	1.0	5			2,235			313			
2	5	1.5	0		14,949							
2		1.0	0		-3,032							
					11,917	2,234	0	8,682	313			
4	6	1.0	5			16,001			2,100		Flow Rate = 16,000 gallons per Day	
4	5	1.5	0	344,864	444,826							
4		1.0	0		-22,864							
					421,867	16,001	0	406,866	2,100			
4	6	1.0	5			13,284			1,896			
4	6	1.5	0	344,864	428,044							
0		1.0	4		-16,292							
					412,752	13,284	0	399,498	1,896			
2	5	1.0	5			6,786			960			
2	6	1.5	0	290,398	278,672							
0		1.0	0		-6,094							
					268,474	6,786	0	262,684	960			
					2,262,704	416,262	0	1,864,061	88,245	0		
2	23		34.6		354,733	56,980		298,753	7,837		[illegible] includes 77 units ranging in size	
0	5		7.5		12,926	3,406		9,520	477			
0	7		10.5		34,264	1,439		32,829	201			
0	3		7.5		7,434	2,113		5,325	296			
0	5		7.5		12,926	3,406		9,520	477			

UPR-300-14 (From 300-FF-1)	FF3		Unplanned Release, Dimensions Based on Average of Defined Spills		1	No	64.29	34.04	19.84	62.71	32.46	17.46	6.76	1.76
UPR-300-17	FF3		Unplanned Release, Dimensions Based on Average of Defined Spills		1	No	64.29	34.04	19.84	62.71	32.46	17.46	6.76	1.76
UPR-300-18	FF3		Unplanned Release, Dimensions Based on Average of Defined Spills		1	No	64.29	34.04	19.84	62.71	32.46	17.46	6.76	1.76
UPR-300-2 (From 300-FF-1)	FF3		Unplanned Release, Dimensions Based on Average of Defined Spills		1	No	64.29	34.04	19.84	62.71	32.46	17.46	6.76	1.76
UPR-300-39	FF3		Unplanned Release, Dimensions Based on Average of Defined Spills		1	No	64.29	34.04	19.84	62.71	32.46	17.46	6.76	1.76
UPR-300-4	FF3		Unplanned Release		1	No	220	160	100	220	160	100	20	0
UPR-300-40	FF3		Unplanned Release, Dimensions Based on Average of Defined Spills		1	No	64.29	34.04	19.84	62.71	32.46	17.46	6.76	1.76
UPR-300-41 (From 300-FF-1)	FF3		Unplanned Release		1	No	36	20	6	36	20	6	6	0
UPR-300-42	FF3		Unplanned Release, Dimensions Based on Average of Defined Spills		1	No	64.29	34.04	19.84	62.71	32.46	17.46	6.76	1.76
UPR-300-43	FF3		Unplanned Release, Dimensions Based on Average of Defined Spills		1	No	66.29	36.04	20.84	62.71	32.46	17.46	6.76	1.76
UPR-300-44	FF3		Unplanned Release, Dimensions Based on Average of Defined Spills		1	No	66.29	36.04	20.84	62.71	32.46	17.46	6.76	1.76
UPR-300-45	FF3		Unplanned Release, Dimensions Based on Average of Defined Spills		1	No	66.29	36.04	20.84	62.71	32.46	17.46	6.76	1.76
UPR-300-46	FF3		Unplanned Release, Dimensions Based on Average of Defined Spills		1	No	66.29	36.04	20.84	62.71	32.46	17.46	6.76	1.76
UPR-300-6	FF3		Unplanned Release, Dimensions Based on Average of Defined Spills		1	No	64.29	34.04	19.84	62.71	32.46	17.46	6.76	1.76
UPR-300-7	FF3		Unplanned Release, Dimensions Based on Average of Defined Spills		1	No	64.29	34.04	19.84	62.71	32.46	17.46	6.76	1.76
UPR-400-1	FF4		Unplanned Release, Dimensions Based on Average of Defined Spills		1	No	64.29	34.04	19.84	62.71	32.46	17.46	6.76	1.76
			Category Average and/or Subtotal						117					
none			Unplanned Release, Dimensions Based on Average of Defined Spills						21434			4.76		4.76
			* Dimensional Data Not Available											

0	6		7.5		12,926	3,406		9,620	477					
0	6		7.5		12,926	3,406		9,620	477					
0	6		7.5		12,926	3,406		9,620	477					
0	6		7.5		12,926	3,406		9,620	477					
0	6		7.5		12,926	3,406		9,620	477					
0	20		20		720,000	344,000		384,000	46,160					
0	6		7.5		12,926	3,406		9,620	477					
0	6		7.5		3,475	875		3,000	123					
0	6		7.5		12,926	3,406		9,620	477					
0	6		7.5		13,213	3,631		9,683	494					
0	6		7.5		13,213	3,631		9,683	494					
0	6		7.5		13,213	3,631		9,683	494					
0	6		7.5		13,213	3,631		9,683	494					
0	6		7.5		12,926	3,406		9,620	477					
0	6		7.5		12,926	3,406		9,620	477					
0	6		7.5		12,926	3,406		9,620	477					
					913,987	383,658	0	520,928	56,026	0				
13					—	—	—	—	—	—	Note: No Estimate at This Time			
			Total bcf		46,896,367	16,464,669	20,462	23,834,440	2,264,222	0				
					Note: All volumes are in Bank Cubic Feet (bcf)									
						Cubic Feet	Cubic Yards							

Burial Ground Volumes Excluded from WHC Environmental Restoration Volume Estimates

Site Name	Model Type	Number of Units in Waste Site	Site Dimensions Length (ft)	Site Dimensions Width (ft)	Site Dimensions Depth (ft)	Over-burden (below grade) (ft)	Over-burden (above grade) (ft)	Contamination Migration Depth (ft)	Total Depth (below grade) (ft)	Total Site Excavation Length (ft)	Total Site Excavation Width (ft)	Total Volume (bank ft3) (a)	Contaminated Volume (bank ft3)	Comments
300-IU-1														
UPR-600-1	2	1	300	100	1	0	0	N/A	1	303	103	31,209	30,000	(b)
UPR-600-2	2	1	5	5	1	0	0	N/A	1	8	8	64	25	(b)
UPR-600-3	2	1	20	30	1	0	0	N/A	1	23	33	759	600	(b)
UPR-600-4	2	1	35	35	1	0	0	N/A	1	38	38	1,444	1,225	(b)
UPR-600-5	2	1	45	45	1	0	0	N/A	1	48	48	2,304	2,025	(b)
UPR-600-6	2	1	40	40	1	0	0	N/A	1	43	43	1,849	1,600	(b)
UPR-600-7	2	1	15	15	1	0	0	N/A	1	18	18	324	225	(b)
UPR-600-8	2	1	6	6	1	0	0	N/A	1	9	9	81	36	(b)
UPR-600-9	2	1	750	450	1	0	0	N/A	1	753	453	341,109	337,500	(b)
UPR-600-10	2	1	20	20	1	0	0	N/A	1	23	23	529	400	(b)
UPR-600-11												0	0	Contaminated material disposed of in JA Jones 1 (was clean pit)
TOTAL VOLUMES FOR WASTE SITES												**379,672**	**373,636**	**bank cubic feet**
												14,062	**13,838**	**bank cubic yards**
												10,751	**10,580**	**bank cubic meters**

(a) All volumes are in bank cubic feet

(b) WIDS database listed no dimensions for these waste sites, dimensions are based on best judgment from limited information in WIDS database.

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APPENDIX E

EXPLANATION OF VOLUME CALCULATIONS FOR NON-ENVIRONMENTAL RESTORATION WASTE SITES

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The models for the non-Environmental Restoration (non-ER) volume estimates are based on simplified versions of the Westinghouse Hanford Company (WHC) Environmental Restoration (ER) volume estimates. The models were designed to produce a conservative estimates of anticipated volumes.

The calculations for the non-ER included evaluating the volumes of various sections of each waste site and adding the volumes, as needed, to calculate the total contaminated and the total excavated volume estimates for each site. The following symbols are used in the formulas for the models:

x_1	=	Width of the disposal cell
y_1	=	Length of the disposal cell
z_1	=	Depth of the disposal cell
z_2	=	Overburden (below-grade)
z_3	=	Overburden (above-grade)
z_4	=	Depth of the waste plume beneath of the disposal cell
Z	=	Maximum depth of excavation $(z_1 + z_2 + z_3 + z_4)$
X	=	Maximum top excavation width $(x_1 + 2 * m * Z)$
Y	=	Maximum top excavation length $(y_1 + 2 * m * Z)$
m	=	Horizontal to vertical excavation slope of waste plume or excavation (1.5)

Type 1 Model - This model includes a waste site with a disposal cell which has both lateral and vertical dispersion of liquid around the disposal cell. Figure E-1 shows the disposal cell, the contaminated volume around the disposal cell, and the total excavated volume.

The contaminated volume for this model includes the disposal cell and the soil around the cell which was contaminated by the liquid waste dispersion. The dimensions for the total contaminated volume are based on the depth of the waste plume beneath the waste site, the dimensions of the waste site, and the excavation slope

Contaminated Volume Width = $(x_1 + (2 * m * z_4))$

Contaminated Volume Length = $(y_1 + (2 * m * z_4))$

Contaminated Volume Depth = $(z_1 + z_4)$

Contaminated Volume = $(x_1 + (2 * m * z_4)) * (y_1 + (2 * m * z_4)) * (z_1 + z_4)$

The dimensions for the excavated volume are based on the total depth of the waste site, the dimensions of the waste site, and the slope factor.

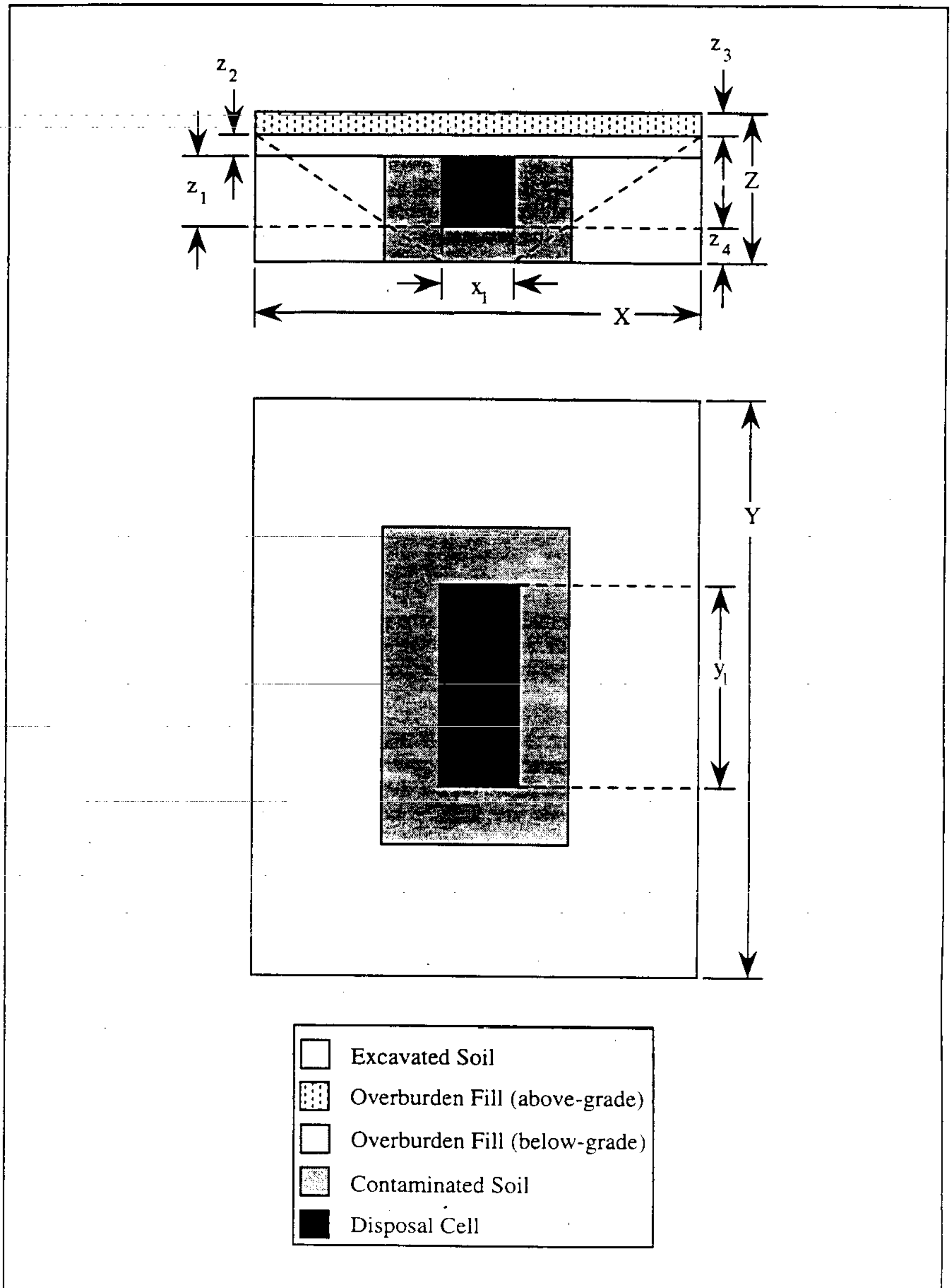
Excavated Volume Width = $(x_1 + (2 * m * (z_1 + z_2 + z_4))$

Excavated Volume Length = $(y_1 + (2 * m * (z_1 + z_2 + z_4))$

Excavated Volume Depth = Z

Excavated Volume = $(x_1 + (2 * m * (z_1 + z_2 + z_4))) * (y_1 + (2 * m * (z_1 + z_2 + z_4))) * Z$

Figure E-1. Non-Enviromental Restoration Model Type 1.



Model Type 2 -- This model type includes a disposal cell which has no dispersion into the surrounding soil. Figure E-2 shows the disposal cell (which is the contaminated volume) and the excavated volumes.

The dimensions for the contaminated volume are based solely on the dimension of the waste site disposal cell.

Contaminated Volume Width = (x_1)

Contaminated Volume Length = (y_1)

Contaminated Volume Depth = (z_1)

Contaminated Volume = $(x_1) * (y_1) * (z_1)$

The dimensions for the excavated volume are based on the total depth of the waste site, the dimensions of the waste site, and the excavation slope.

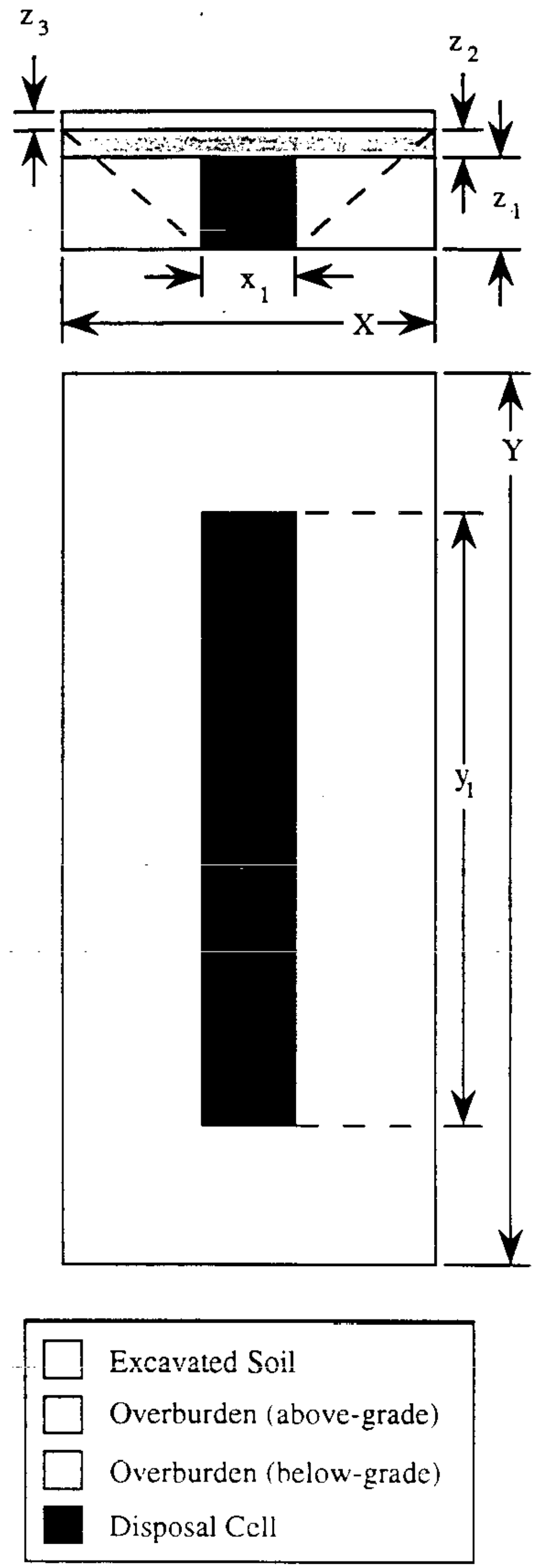
Excavated Volume Width = $(x_1 + (2 * m * (z_1 + z_2))$

Excavated Volume Length = $(y_1 + (2 * m * (z_1 + z_2))$

Excavated Volume Depth = $z_1 + z_2 + z_3$

Excavated Volume = $(x_1 + (2 * m * (z_1 + z_2))) * (y_1 + (2 * m * (z_1 + z_2))) * z_1 + z_2 + z_3$

Figure E-2. Non-Environmental Restoration Model Type 2.



APPENDIX F

NON-ENVIRONMENTAL RESTORATION VOLUME ESTIMATES

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Non-ER Volumes Estimates (includes Decommissioning and Decontamination and Miscellaneous Other Waste Sites)

Site Name	Model Type	Number of Units in Waste Site	Site Dimensions			Over-burden (below grade)	Over-burden (above grade)	Contamination Migration Depth	Total Depth (below grade)	Total Site Excavation Length	Total Site Excavation Width	Total Volume	Contaminated Volume	Comments
			Length (ft)	Width (ft)	Depth (ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(bank ft3) (a)	(bank ft3)	
100-BC-1														
118-B-9	2	1	24	12	10	0	0	N/A	10	54	42	22,680	2,880	
132-B-2	2	1	200	16.58								178,688	8,954	Based on calculated values for 132-C-1
600-34	2	1	800	300	15	0	0	N/A	15	845	345	4,372,875	3,600,000	
100-BC-2														
600-33	2	1	20	20	12	0	0	N/A	12	56	56	37,632	4,800	
118-C-4	2	1	40	25	15	0	4	N/A	15	85	70	113,050	15,000	
											SUBTOTAL	4,724,925	3,631,634	
100-DR-1														
132-D-4	2	1	200	16.58								178,688	8,954	Based on calculated values for 132-C-1
108-D	1	1	132	32	20	0	0	5	25	207	107	553,725	172,725	(b); Height based on approximate demolition volume, not initial volume of building
Sodium Dichromate Tanks	1	1	15	10	1	0	0	5	6	33	28	5,544	4,500	(b); Above ground tank, volume estimate accounts for the possible contaminated soil beneath tank. Tank has been removed
103-D	1	1	25	50	10	0	0	5	15	70	95	99,750	39,000	(b); Height based on approximate demolition volume, not initial volume of building
100-DR-2														
116-D-8	1	1	100	75	1	0	0	5	6	118	93	65,844	62,100	
122-DR-1	1	1	100	75	5	0	0	5	10	130	105	136,500	103,500	
132-DR-2	1	1	200	16.58								178,688	8,954	Based on calculated values for 132-C-1
											SUBTOTAL	1,218,739	399,733	
100-HR-1														
Electrical Facility	2	1	250	250	5	0	0	N/A	5	265	265	351,125	312,500	(a)
											SUBTOTAL	351,125	312,500	

Non-ER Volumes Estimates (includes Decommissioning and Decontamination and Miscellaneous Other Waste Sites)

Site Name	Model Type	Number of Units in Waste Site	Site Dimensions Length (ft)	Width (ft)	Depth (ft)	Over-burden (below grade) (ft)	Over-burden (above grade) (ft)	Contamination Migration Depth (ft)	Total Depth (below grade) (ft)	Total Site Excavation Length (ft)	Total Site Excavation Width (ft)	Total Volume (bank ft3) (a)	Contaminated Volume (bank ft3)	Comments
100-KR-2														
116-KE-5	1	1	25	25	2	0	0	5	7	46	46	14,812	11,200	(b)
116-KW-4	1	1	25	25	2	0	0	5	7	46	46	14,812	11,200	(b)
118-KE-2	2	1	40	25	15	0	5	N/A	15	85	70	119,000	15,000	
118-KW-2	2	1	40	25	15	0	5	N/A	15	85	70	119,000	15,000	
132-KE-1	2	1	300	22								268,032	13,431	Based on calculated values for 132-C-1; multiplied by 1.5 to adjust for difference in height
132-KW-1	2	1	300	22								268,032	13,431	Based on calculated values for 132-C-1; multiplied by 1.5 to adjust for difference in height
100-KR-3														
120-KE-4	1	1	10	10	1	0	0	5	6	28	28	4,704	3,750	(b); Above ground tank, volume estimate accounts for possible contaminated soil beneath tank. Tank is empty, tank volume not included.
120-KE-5	1	1	10	10	1	0	0	5	6	28	28	4,704	3,750	(b); Above ground tank, volume estimate accounts for possible contaminated soil beneath tank. Tank is empty, tank volume not included.
120-KW-3	1	1	10	10	1	0	0	5	6	28	28	4,704	3,750	(b); Above ground tank, volume estimate accounts for possible contaminated soil beneath tank. Tank is empty, tank volume not included.
120-KW-4	1	1	10	10	1	0	0	5	6	28	28	4,704	3,750	(b); Above ground tank, volume estimate accounts for possible contaminated soil beneath tank. Tank is empty, tank volume not included.
126-KE-2	1	1	25	25	10	0	0	5	15	70	70	73,500	24,000	(b); Tank assumed below ground
126-KE-3	1	1	25	25	10	0	0	5	15	70	70	73,500	24,000	(b); Tank assumed below ground
											SUBTOTAL	969,504	142,262	
300-FF-1														
340 Complex HWSA	1	1	100	75	1	0	0	5	6	118	93	65,844	62,100	(b)
322 HWSA	1	1	100	75	1	0	0	5	6	118	93	65,844	62,100	(b)
628-4	2	4	300	18	15	0	4	N/A	15	345	63	412,965	81,000	(b); Dimensions account for both pits in this waste site
UPR-300-FF-1	1	57	100	100	1	0	0	5	6	118	118	4,762,008	4,522,950	(b)

Non-ER Volumes Estimates (includes Decommissioning and Decontamination and Miscellaneous Other Waste Sites)

Site Name	Model Type	Number of Units in Waste Site	Site Dimensions Length (ft)	Site Dimensions Width (ft)	Site Dimensions Depth (ft)	Over-burden (below grade) (ft)	Over-burden (above grade) (ft)	Contamination Migration Depth (ft)	Total Depth (below grade) (ft)	Total Site Excavation Length (ft)	Total Site Excavation Width (ft)	Total Volume (bank ft3) (a)	Contaminated Volume (bank ft3)	Comments
300-FF-2														
Solvent Evaporator	1	1	8	4	3	0	0	5	8	32	28	7,168	3,496	Assumes tank is full with contaminated material
300-FF-3														
Interim Filter Backwash Disposal	1	1	10	10	10	6	0	5	21	73	73	111,909	9,375	(b)
Powerhouse HWSA	1	1	100	100	1	0	0	3	4	112	112	50,176	47,524	(b)
303-K Contaminated Waste Storage	1	1	20	30	1	0	0	5	6	38	48	14,444	9,450	(b); Storage pad inside a building; dimension based on a 600 sq ft area pad which was used to store liquid waste.
	2	1	350	100	1	0	0	N/A	1	353	103	36,359	35,000	(b); based on 3500 sq ft area which was used to store solid waste.
303-M Storage Area	1	1	100	100	1	0	0	3	4	112	112	50,176	47,524	(b)
303-M Uranium Oxide Facility	1	1	100	100	20	0	0	5	25	175	175	765,625	330,625	(b)
304 Concretion Facility	1	1	50	50	20	0	0	5	25	125	125	390,625	105,625	(b)
304 Storage Facility	2	1	50	50	20	0	0	N/A	20	110	110	242,000	50,000	(b)
305-B Storage Facility	1	1	50	50	20	0	0	5	25	125	125	390,625	105,625	(b)
309-WS-1	1	1	19	19	41.5	0	0	5	47	159	159	1,168,185	53,754	
309-WS-2	1	1	26.16	15.83	16	0	0	5	21	89	79	147,598	26,648	
311-TK-40	1	1	20	20	10	0	0	5	15	65	65	63,375	18,375	(b)
311-TK-50	1	1	25	20	10	0	0	5	15	70	65	68,250	0	(b)
313 Centrifuge	2	1	10	10	10	0	0	N/A	10	40	40	16,000	1,000	(b)
313 Copper Remelt Operations	1	1	50	50	20	0	0	5	25	125	125	390,625	105,625	(b)
313 East Side Storage Pad	1	1	50	50	1	0	0	3	4	62	62	15,376	13,924	(b)
313 Filter Press	2	1	10	10	10	0	0	N/A	10	40	40	16,000	1,000	(b)

Non-ER Volumes Estimates (includes Decommissioning and Decontamination and Miscellaneous Other Waste Sites)

Site Name	Model Type	Number of Units in Waste Site	Site Dimensions Length (ft)	Site Dimensions Width (ft)	Site Dimensions Depth (ft)	Over-burden (below grade) (ft)	Over-burden (above grade) (ft)	Contamination Migration Depth (ft)	Total Depth (below grade) (ft)	Total Site Excavation Length (ft)	Total Site Excavation Width (ft)	Total Volume (bank ft3) (a)	Contaminated Volume (bank ft3)	Comments
313 TK-2	1	1	20	20	10	0	0	5	15	65	65	63,375	18,375	(b)
313 Uranium Recovery Operations	1	1	100	25	1	0	0	5	6	118	43	30,444	27,600	(b)
323 Tank 1	1	1	48	10	10	6	0	5	21	111	73	170,163	23,625	
323 Tank 2	1	1	48	10	10	6	0	5	21	111	73	170,163	23,625	
323 Tank 3	1	1	48	10	10	6	0	5	21	111	73	170,163	23,625	
323 Tank 4	1	1	48	10	10	6	0	5	21	111	73	170,163	23,625	
324 Sodium Removal Pilot Plant	2	1	50	50	20	0	0	N/A	20	110	110	242,000	50,000	(b)
325 Waste Treatment Facility	1	1	50	50	20	0	0	5	25	125	125	390,625	105,625	(b)
331-C HWSA	1	1	100	75	1	0	0	5	6	118	93	65,844	62,100	(b)
333 East Side HWSA	1	1	100	75	1	0	0	5	6	118	93	65,844	62,100	(b)
333 East Side Heat Treat Salt Storage Area	2	1	50	50	20	0	0	N/A	20	110	110	242,000	50,000	(b)
333 Laydown HWSA	1	1	100	75	1	0	0	3	4	112	87	38,976	36,624	(b)
334 Tank Farm Waste Acid Storage Tank	1	1	20	10	10	0	0	5	15	65	55	53,625	13,125	(b)
334-A-TK-B	1	1	20	10	10	0	0	5	15	65	55	53,625	13,125	(b)
334-A-TK-C	1	1	20	10	10	0	0	5	15	65	55	53,625	13,125	(b)
350 HWSA	1	1	50	50	1	0	0	5	6	68	68	27,744	25,350	(b)
3712 Uranium Scrap Storage Area	2	1	50	50	20	0	0	N/A	20	110	110	242,000	50,000	(b)
3718 F Burn Shed	2	1	20	20	20	0	0	N/A	20	80	80	128,000	8,000	(b)
3718 F Storage Facility	2	1	20	20	20	0	0	N/A	20	80	80	128,000	8,000	(b)
3718 F Treatment Tank 1	1	1	20	20	20	0	0	5	25	95	95	225,625	30,625	(b)

Non-ER Volumes Estimates (includes Decommissioning and Decontamination and Miscellaneous Other Waste Sites)

Site Name	Model Type	Number of Units in Waste Site	Site Dimensions			Over-burden (below grade)	Over-burden (above grade)	Contamination Migration Depth	Total Depth (below grade)	Total Site Excavation Length	Total Site Excavation Width	Total Volume	Contaminated Volume	Comments
			Length (ft)	Width (ft)	Depth (ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(bank ft3) (a)	(bank ft3)	
3718-F Treatment Tank 2	1	1	20	20	20	0	0	5	25	95	95	225,625	30,625	(b)
3746-D Silver Recovery	2	1	20	20	5	0	0	N/A	5	35	35	6,125	2,000	(b)
UPR-300-38	1	1	50	50	2	0	0	5	7	71	71	35,287	29,575	(b)
300-FF-4														
427 HWSA	1	1	100	75	1	0	0	5	6	118	93	65,844	62,100	(b)
437 MASF	1	1	100	50	20	0	0	5	25	175	125	546,875	186,875	(b)
4713-B HWSA	1	1	100	75	1	0	0	5	6	118	93	65,844	62,100	(b)
4722 Paint Shop HWSA	1	1	100	75	1	0	0	5	6	118	93	65,844	62,100	(b)
4831 Laydown HWSA	1	1	100	75	1	0	0	5	6	118	93	65,844	62,100	(b)
4843	2	1	40	40	20	0	0	N/A	20	100	100	200,000	32,000	(b)
300-IU-1														
600-21	1	1	450	300	2	0	0	5	7	471	321	1,058,337	1,025,325	(b)
600-23	1	1	600	600	30	0	0	5	35	705	705	17,395,875	13,237,875	(b)
SUBTOTAL												31,714,681	21,153,669	
TOTAL VOLUMES FOR NON-ER WASTE SITES												**38,978,974**	**25,639,798**	**bank cubic feet**
												1,443,666	**949,622**	**bank cubic yards**
												1,103,768	**726,042**	**bank cubic meters**

(a) All volumes are in bank cubic feet

(b) WIDS database listed no dimensions for these waste sites. dimensions are based on best judgment from limited information in WIDS database

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APPENDIX G

ANALOGOUS SITES

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Analogous Sites

Operable Unit	Site Number	LFI	Data	Analogous Sites	Comments
Environmental Restoration Waste Sites					
100-BC-1	116-B-1	X	X	N/A	
100-BC-1	116-B-2	X	X	N/A	
100-BC-1	116-B-3	X	X	N/A	
100-BC-1	116-B-4	X		116-H-3	
100-BC-1	116-B-5	X	X	N/A	
100-BC-1	116-B-6A	X	X	N/A	
100-BC-1	116-B-6B	X		116-D-2, 116-B-3	
100-BC-1	116-B-7	X		116-D-5, 116-DR-5	
100-BC-1	116-B-9	X		116-D-3, 116-D-6	
100-BC-1	116-B-10	X		116-B-5	
100-BC-1	116-B-11	X		116-C-5, 116-D-7, 116-H-7, 116-DR-9	
100-BC-1	116-B-12	X		116-D-9, 116-H-9	
100-BC-1	116-B-13	X		116-C-5, 116-D-7, 116-H-7, 116-DR-9	
100-BC-1	116-B-14	X		116-C-5, 116-D-7, 116-H-7, 116-DR-9	
100-BC-1	116-B-15			116-B-2, 116-D-1A, 116-D-1B	
100-BC-1	116-B-16			116-D-2, 116-B-3	
100-BC-1	116-C-1	X		116-B-1, 116-DR-1, 116-DR-2, 116-H-1	
100-BC-1	116-C-5	X	X	N/A	
100-BC-1	118-B-5	X		118-B-5	Burial ground, highly contaminated
100-BC-1	118-B-7	X		118-B-5	Burial ground, Cl-60 & Ni-63
100-BC-1	118-B-10	X		118-B-5	Burial ground, irradiated reactor parts
100-BC-1	120-B-1			CLEAN	Clean and neutralized
100-BC-1	126-B-1			118-B-5	Ash Pit
100-BC-1	126-B-2	X		118-B-5	Reinforced concrete and pump room, partly demolished
100-BC-1	126-B-3			118-B-5	Burial ground, with rubble from demolished building; former coal pit
100-BC-1	126-B-4			118-B-5	Area brine and salt pits; concrete vaults
100-BC-1	128-B-1			118-B-5	
100-BC-1	128-B-2			118-B-5	Burn pit
100-BC-1	128-B-3			118-B-5	Pump Site
100-BC-1	128-C-1			118-B-5	Burn pit
100-BC-1	132-B-1			116-B-5	
100-BC-1	132-B-3			118-B-5	Ventilation exhaust stack, still standing, considered analogous to 132-C-1 which has been demolished and is considered a burial ground
100-BC-1	132-B-4			UNKNOWN (a)	Demolished filter building, solid waste, low-level; H-3, C-14, Cs-137, Sr-90, Pu-239/240
100-BC-1	132-B-5			UNKNOWN (a)	Demolished gas recirculating building, solid waste, low-level; H-3, C-14, Cs-137, Eu-152, Sr-90, Pu-239/240

Analogous Sites

Operable Unit	Site Number	LFI	Data	Analogous Sites	Comments
100-BC-1	132-B-6			116-D-5, 116-DR-5	
100-BC-1	132-C-2			116-D-5, 116-DR-5	
100-BC-1	1607-B1			1607-H2 & 1607-H4	
100-BC-1	1607-B2			1607-H2 & 1607-H4	
100-BC-1	1607-B3			1607-H2 & 1607-H4	
100-BC-1	1607-B4			1607-H2 & 1607-H4	
100-BC-1	1607-B5			1607-H2 & 1607-H4	
100-BC-1	1607-B6			1607-H2 & 1607-H4	
100-BC-1	1607-B7			1607-H2 & 1607-H4	
100-BC-2	116-C-2A			116-B-3, 116-D-2	
100-BC-2	116-C-2B			132-D-3	Pump station
100-BC-2	116-C-2C			116-B-3, 116-D-2	
100-BC-2	116-C-3			118-B-5	Storage tank, never used, CLEAN
100-BC-2	116-C-6			116-D-1B, 116-D-1A, 116-B-2	
100-BC-2	118-C-2			118-B-5	Storage tank, highly irradiated boron steel balls for radioactive decay, balls still present
100-BC-2	132-C-1			118-B-5	Reactor exhaust stack, contaminated inside
100-BC-2	132-C-3			UNKNOWN (a)	Filter building, demolished. Contamination includes H-3, C-14, Co-60, Cs-137, Sr-90, Eu-154, Eu-152, and Pu-239/240
100-BC-2	1607-B8			1607-H2 & 1607-H4	
100-BC-2	1607-B10			1607-H2 & 1607-H4	
100-BC-2	1607-B11			1607-H2 & 1607-H4	
100-BC-3	118-B-2			118-B-5	
100-BC3	118-B-3			118-B-5	
100-BC-3	118-B-4			118-B-5	
100-BC-3	118-B-6			118-B-5	
100-BC-4	118-B-1			N/A	Burial ground log information; burial ground with irradiated reactor parts
100-BC-4	118-C-1			118-B-1	
100-BC-4	1607-B9			1607-H2 & 1607-H4	
100-DR-1	116-D-1A	X	X	N/A	
100-DR-1	116-D-1B	X	X	N/A	
100-DR-1	116-D-2	X	X	N/A	
100-DR-1	116-D-3	X	X	N/A	
100-DR-1	116-D-4	X	X	N/A	
100-DR-1	116-D-5	X	X	N/A	
100-DR-1	116-D-6	X	X	N/A	
100-DR-1	116-D-7	X	X	N/A	
100-DR-1	116-D-9	X	X	N/A	
100-DR-1	116-D-10			116-D-1B, 116-B-2, 116-D-1A	
100-DR-1	116-DR-1	X	X	N/A	
100-DR-1	116-DR-2	X	X	N/A	
100-DR-1	116-DR-5	X	X	N/A	

Analogous Sites

Operable Unit	Site Number	LFI	Data	Analogous Sites	Comments
100-DR-1	116-DR-9	X	X	N/A	
100-DR-1	120-D-1			300 Area Filter Backwash Ponds	
100-DR-1	120-D-2			120-N-1	Waste acid reservoir demolished in place, possible lead contamination
100-DR-1	126-D-1			118-B-5	Ash pit
100-DR-1	126-D-2			118-B-5	Coal pit
100-DR-1	126-D-3			NON-RAD, UNKNOWN (b)	Brine Pit, NaCl>10% - which is hazardous material limit
100-DR-1	128-D-2			118-B-5	Landfill
100-DR-1	130-D-1	X	X	N/A	
100-DR-1	132-D-1			UNKNOWN (a)	
100-DR-1	132-D-2	X		UNKNOWN (a)	Filter building, low-level solid waste
100-DR-1	132-D-3	X	X	N/A	
100-DR-1	628-3			118-B-5	Burning pit
100-DR-1	1607-D2			1607-H2 & 1607-H4	
100-DR-1	1607-D4			1607-H2 & 1607-H4	
100-DR-1	1607-D5			1607-H2 & 1607-H4	
100-DR-2	116-DR-3			116-D-1B, 116-B-2, 116-D-1A	
100-DR-2	116-DR-4			116-B-3, 116-D-2	
100-DR-2	116-DR-6			116-H-2	
100-DR-2	116-DR-7			116-B-3, 116-D-2	+ Potassium borate soluntion
100-DR-2	116-DR-8			116-H-9, 116-D-9	
100-DR-2	118-D-5			118-B-5	Burial ground, highly contaminated
100-DR-2	126-DR-1			118-B-5 (LANDFILL)	Landfill with rubble, friable asbestos, chromates in soil and underground piping
100-DR-2	132-DR-1			132-D-3	Pump station, traces and radionuclide and decontamination chemicals
100-DR-2	1607-D3			1607-H2 & 1607-H4	
100-DR-3	116-DR-10			116-D-1B, 116-B-2, 116-D-1A	
100-DR-3	1607-D1			1607-H2 & 1607-H4	
100-DR-3	600-30			NON-RAD, UNKNOWN (b)	
100-DR-3	118-D-1			118-B-5	
100-DR-3	118-D-2			118-B-1	
100-DR-3	118-D-3			118-B-1	
100-DR-3	118-D-4			118-B-5	
100-DR-3	128-D-1			118-B-5	Burning pit
100-DR-3	118-DR-1			118-B-5	
100-FR-1	116-F-1			116-DR-1, 116-DR-2, 116-B-1, 116-H-1	
100-FR-1	116-F-2			116-DR-1, 116-DR-2, 116-B-1, 116-H-1	
100-FR-1	116-F-3			116-B-2, 116-D-1A, 116-D-1B	
100-FR-1	116-F-4			116-B-3, 116-D-2	

Analogous Sites

Operable Unit	Site Number	LFI	Data	Analogous Sites	Comments
100-FR-1	116-F-5			116-B-3, 116-D-2	Received liquid waste from decontamination of boron steel balls. Contamination includes Cs-137, Eu-154, Eu-155, Sr-90
100-FR-1	116-F-6			116-H-2	
100-FR-1	116-F-7			116-H-9, 116-D-9	
100-FR-1	116-F-8			116-D-5, 116-DR-5	
100-FR-1	116-F-9			UNKNOWN (a)	Received wash waste water from animal pens. Contamination includes Co-60, Cs-137, Eu-152, Eu-154, Eu-155, Pu-239, Pu-240, and Sr-90
100-FR-1	116-F-10			116-H-3	
100-FR-1	116-F-11			116-D-6, 116-D-3	
100-FR-1	116-F-12			116-D-3, 116-D-6	
100-FR-1	116-F-13			116-D-3, 116-D-6	Received effluent water from botany experiments
100-FR-1	116-F-14			116-H-7, 116-D-7, 116-DR-9, 116-C-5	
100-FR-1	116-F-15			UNKNOWN (a)	Unknown, alpha contamination at minimum
100-FR-1	116-F-16			116-D-5, 116-DR-5	Also sewage
100-FR-1	126-F-2			NON-HAZ/NON-RAD (c)	Landfill with rubble (non-contaminated)
100-FR-1	128-F-2			300 Area Ash Pit	
100-FR-1	132-F-3			108-D	H-3, C-14, Co-60, Sr-90, Cs-137
100-FR-1	132-F-4			118-B-5	Exhaust stack
100-FR-1	132-F-5			UNKNOWN (a)	Filter building. H-3, C-14, Co-60, Sr-90, Cs-137, Eu-154, and Eu-152
100-FR-1	132-F-6			132-D-3	Demolished pump station with traces of radionuclides and decontamination chemicals
100-FR-1	1607-F2			1607-H2 & 1607-H4	
100-FR-1	1607-F3			1607-H2 & 1607-H4	
100-FR-1	1607-F4			1607-H2 & 1607-H4	
100-FR-1	1607-F5			1607-H2 & 1607-H4	
100-FR-1	1607-F6			1607-H2 & 1607-H4	
100-FR-1	UPR-100-F-1			UNKNOWN (a)	Animal waste spill, Sr-90 and Pu-239
100-FR-2	118-F-1			118-B-1	Burial ground with radioactive solid wastes and reactor components and hardware. Contaminated with C-14, Co-60, Cs-137, Eu-152, Eu-154, H-3, Ni-63, and Sr-90
100-FR-2	118-F-2			118-B-5	Burial ground with radioactive solid wastes, reactor components and hardware. Contaminated with Co-60
100-FR-2	118-F-3			118-B-5	Burial ground with radioactive solid wastes, reactor components and hardware. Contaminated with Co-60
100-FR-2	118-F-4			N/A	Burial grounds with silica gel, and C-14 and H-3. Burial ground information from the WIDS database
100-FR-2	118-F-5			N/A	Burial ground with low-level activity sawdust from animal pens. Burial ground information from the WIDS database
100-FR-2	118-F-6			118-F-5	Burial ground (biology not reactor-related) with animal and lab wastes

Analogous Sites

Operable Unit	Site Number	LFI	Data	Analogous Sites	Comments
100-FR-2	118-F-7			118-B-5	Burial ground, storage of misc. reactor hardware. Contaminated with Co-60
100-FR-2	118-F-9			118-B-5	Burial ground with solid LLW
100-FR-2	120-F-1			NON-RAD, UNKNOWN (b)	Glass dump with florescent tubes, incandescent light bulbs, vacuum tubes, AAA, C, and D batteries. Assortment of chemical bottles.
100-FR-2	126-F-1			300 Area Ash Pit	
100-FR-2	128-F-1			300 Area Ash Pit	
100-FR-2	128-F-3			300 Area Ash Pit	
100-FR-2	600-31			NON-RAD, UNKNOWN (b)	Dumping Area with lab chemicals including nitric acid, sulfuric acid, and hydrochloric acid.
100-FR-2	1607-F1			1607-H2 & 1607-H4	
100-HR-1	116-H-1	X	X	N/A	
100-HR-1	116-H-2	X	X	N/A	
100-HR-1	116-H-3	X	X	N/A	
100-HR-1	116-H-4	X		UNKNOWN (a)	Same site as 132-H-2, crib excavated
100-HR-1	116-H-5	X		116-D-5, 116-DR-5	
100-HR-1	116-H-6			116-H-7, 116-C-5, 116-D-7, 116-DR-9	Zr, Al, Cr, Ni, Mn, Ur contamination
100-HR-1	116-H-7	X	X	N/A	Retention basin and sludge trench
100-HR-1	116-H-9	X	X	N/A	
100-HR-1	126-H-2			CLEAN	Rubble, CLEAN
100-HR-1	132-H-1	X		118-B-5	Reactor exhaust stack, demolished
100-HR-1	132-H-3	X		132-D-3	
100-HR-1	1607-H2	X	X	N/A	
100-HR-1	1607-H4	X	X	N/A	
100-HR-2	118-H-1			118-B-1	Burial ground with dummy elements, process tubing, and misc. solid waste. Contamination includes C-14, Co-60, Cs-137, Eu-152, Eu-154, H-3, and Sr-90.
100-HR-2	118-H-2			118-B-5	Burial ground, received one stainless steel tube with associated hardware from H-Reactor Experimental Test Facility. Contamination includes Co-60.
100-HR-2	118-H-3			118-B-5	Burial ground with contaminated pipes and reactor hardware. Contamination include Co-60.
100-HR-2	118-H-4			118-B-5	Burial ground for Ball 3X. Contamination includes Co-60.
100-HR-2	118-H-5			118-B-5	Burial ground with thimble assembly from B Experimental Hole and 105-H Pluto Crib (116-H-4). Contamination includes Co-60.
100-HR-2	126-H-1			300 Area Ash Pit	
100-HR-2	128-H-1			300 Area Ash Pit	
100-HR-2	128-H-2			300 Area Ash Pit	
100-HR-2	128-H-3			300 Area Ash Pit	
100-HR-2	132-H-2			UNKNOWN (a)	Same site as 116-H-4, exhaust air filter building, demolished
100-HR-2	1607-H1			1607-H2 & 1607-H4	
100-HR-2	1607-H3			1607-H2 & 1607-H4	
100-IU-2	JA JONES 2			118-B-5	

Analogous Sites

Operable Unit	Site Number	LFI	Data	Analogous Sites	Comments
100-IU-2	600-5			NON-HAZ/NON-RAD (c)	Dumping area
100-IU-2	White Bluffs Landfill			NON-RAD, UNKNOWN (b)	Landfill
100-IU-2	East White Bluffs City Landfill			NON-RAD, UNKNOWN (b)	Landfill
100-IU-2	628-1			118-B-5	
100-KR-1	116-K-1			116-B-1, 116-H-1, 116-DR-1, 116-DR-2	
100-KR-1	116-K-2			UNKNOWN (a)	300,000,000,000 liters of contaminated floor drain waste from KE and KW reactors. Contamination includes copper sulfate, sodium, dichromate, sulfuric acid, and sulfamic acid.
100-KR-1	116-K-3			116-D-5, 116-DR-5	
100-KR-1	116-KE-4			116-DR-9, 116-H-7, 116-D-7, 116-C-5	
100-KR-1	116-KW-3			116-DR-9, 116-H-7, 116-D-7, 116-C-5	
100-KR-2	116-KE-1			116-B-3, 116-D-2	C-14 and H-3
100-KR-2	116-KE-2			116-B-3, 116-D-2	C-14, Co-60, Cs-137, Eu-152, Eu-154, Eu-155, H-3, Pu-239, Pu-240, Sr-90, U-235, and U-238
100-KR-2	116-KE-3			116-D-1A, 116-D-1B, 116-B-2	
100-KR-2	116-KW-1			116-B-3, 116-D-2	C-14, Co-60, Cs-134, Cs-137, Eu-152, Eu-154, Eu-155, H-3, Sr-90, and U-238
100-KR-2	116-KW-2			116-D-1A, 116-D-1B, 116-B-2	
100-KR-2	118-K-1			N/A	Burial ground with numerous trenches and vertical steel pipes of various sizes that contain radioactive solid wastes from K and N reactors. Contamination includes C-14, Co-60, Cs-137, Eu-152, Eu-154, Eu-155, H-3, Pu-239, Pu-240, Sr-90, U-235, and U-238
100-KR-2	120-KE-8			NON-RAD, UNKNOWN (b)	Salt brine pit, hazardous liquid
100-KR-2	120-KW-6			NON-RAD, UNKNOWN (b)	Salt brine pit, hazardous liquid
100-KR-2	126-K-1			NON-RAD, UNKNOWN (b)	Landfill with concrete, wood, steel pipes, structural steel, conduit, and wire; non-radioactive
100-KR-2	130-K-1			130-D-1	Gasoline tank filled with water
100-KR-2	130-K-2			UPR-100-N-17	Small amount of oil left
100-KR-2	130-KE-1			UPR-100-N-17	
100-KR-2	130-KE-2			UPR-100-N-17 (d)	Oil storage tank, 2000 gal oil heel remains
100-KR-2	130-KW-1			UPR-100-N-17	
100-KR-2	130-KW-2			UPR-100-N-17 (d)	Oil storage tank, 2000 gal oil heel remains
100-KR-2	1607-K4			1607-H2 & 1607-H4	
100-KR-2	1607-K6			1607-H2 & 1607-H4	
100-KR-2	UPR-100-K-1			116-D-1A, 116-D-1B, 116-B-2	250 Ci (includes 1.3 Ci Pu 239/240)
100-KR-3	120-KE-1			120-N-1	Received sulfuric acid sludge and high mercury levels

Analogous Sites

Operable Unit	Site Number	LFI	Data	Analogous Sites	Comments
100-KR-3	120-KE-2			120-N-1	Received sulfuric acid sludge
100-KR-3	120-KE-3			120-N-1	Received sulfuric acid sludge and high mercury levels
100-KR-3	120-KE-6			Sodium Dichromate Tank in OU 100-DR-1	
100-KR-3	120-KE-9			NON-RAD, UNKNOWN (b)	Salt brine pit, hazardous liquid
100-KR-3	120-KW-1			120-N-1	Received sulfuric acid sludge
100-KR-3	120-KW-2			120-N-1	Received sulfuric acid sludge
100-KR-3	120-KW-5			Sodium Dichromate Tank in OU 100-DR-1	
100-KR-3	120-KW-7			NON-RAD, UNKNOWN (b)	Same as 120-KE-9
100-KR-3	128-K-1			300 Area Ash Pits	
100-KR-3	128-K-2			300 Area Ash Pits	Also friable and nonfriable asbestos
100-KR-3	130-K-3			UPR-100-N-17	
100-KR-3	600-4			NON-HAZ/NON-RAD (c)	Military landfill with old food containers, gas and oil containers, empty ammo crates
100-KR-3	600-29			NON-RAD, UNKNOWN (b)	Dumping area with metal, wood, cans, bottles, construction hardware and materials, tar dumped on ground, buckets and mops covered with tar, 5 gal. bucket with oily rags, broken pieces of toilet bowl, asbestos, and wire rope.
100-KR-3	1607-K1			1607-H2 & 1607-H4	
100-KR-3	1607-K2			1607-H2 & 1607-H4	
100-KR-3	1607-K3			1607-H2 & 1607-H4	
100-KR-3	1607-K5			1607-H2 & 1607-H4	
100-NR-1	116-N-1		X	N/A	
100-NR-1	116-N-2		X	N/A	
100-NR-1	116-N-3			116-N-1	
100-NR-1	116-N-4			116-N-1	
100-NR-1	118-N-1			UNKNOWN (a)	Storage facility for fuel spacers
100-NR-1	120-N-1		X	N/A	
100-NR-1	120-N-2		X	N/A	
100-NR-1	120-N-3			120-N-1	Hazardous, sulfuric acid and sodium hydroxide
100-NR-1	120-N-5			120-N-1	
100-NR-1	120-N-6			120-N-1	
100-NR-1	120-N-7			120-N-1	
100-NR-1	120-N-8			120-N-1	
100-NR-1	124-N-1			1607-H2 & 1607-H4	
100-NR-1	124-N-2			1607-H2 & 1607-H4	
100-NR-1	124-N-3			1607-H2 & 1607-H4	
100-NR-1	124-N-4			1607-H2 & 1607-H4	
100-NR-1	124-N-5			1607-H2 & 1607-H4	
100-NR-1	124-N-6			1607-H2 & 1607-H4	
100-NR-1	124-N-7			1607-H2 & 1607-H4	
100-NR-1	124-N-8			1607-H2 & 1607-H4	

Analogous Sites

Operable Unit	Site Number	LFI	Data	Analogous Sites	Comments
100-NR-1	124-N-9			1607-H2 & 1607-H4	
100-NR-1	124-N-10			1607-H2 & 1607-H4	
100-NR-1	128-N-1			300 Area Ash Pit	
100-NR-1	130-N-1			120-N-1	+ polyacrylamide and alum sulfate
100-NR-1	600-32			NON-RAD, UNKNOWN (b)	Landfill
100-NR-1	600-35			NON-RAD, UNKNOWN (b)	Landfill/dumping area
100-NR-1	UPR-100-N-1			UPR-100-N-4, UPR-100-N-8	
100-NR-1	UPR-100-N-2			UPR-100-N-9, UPR-100-N-14	
100-NR-1	UPR-100-N-3			UPR-100-N-9,	
100-NR-1	UPR-100-N-4		X	N/A	
100-NR-1	UPR-100-N-5			116-N-2	
100-NR-1	UPR-100-N-6			UPR-100-N-9, UPR-100-N-14	
100-NR-1	UPR-100-N-7			UPR-100-N-9, UPR-100-N-14	
100-NR-1	UPR-100-N-8		X	N/A	
100-NR-1	UPR-100-N-9		X	N/A	
100-NR-1	UPR-100-N-10			UPR-100-N-9, UPR-100-N-14	
100-NR-1	UPR-100-N-11			UPR-100-N-9, UPR-100-N-14	
100-NR-1	UPR-100-N-12			UPR-100-N-9, UPR-100-N-14	
100-NR-1	UPR-100-N-13			UPR-100-N-9, UPR-100-N-14	Dump tank filtered water with .2 Ci rad. const. low-level
100-NR-1	UPR-100-N-14		X	N/A	
100-NR-1	UPR-100-N-15			120-N-1	
100-NR-1	UPR-100-N-17		X	N/A	
100-NR-1	UPR-100-N-18			UPR-100-N-17	Deisel oil supply line leak, hazardous
100-NR-1	UPR-100-N-19			UPR-100-N-17	
100-NR-1	UPR-100-N-20			UPR-100-N-17	
100-NR-1	UPR-100-N-21			UPR-100-N-17	
100-NR-1	UPR-100-N-22			UPR-100-N-17	
100-NR-1	UPR-100-N-23			UPR-100-N-17	
100-NR-1	UPR-100-N-24			UPR-100-N-17	
100-NR-1	UPR-100-N-25			116-N-1	
100-NR-1	UPR-100-N-26			116-N-1	
100-NR-1	UPR-100-N-29			116-N-1	
100-NR-1	UPR-100-N-30			116-N-1	
100-NR-1	UPR-100-N-31			116-N-1	
100-NR-1	UPR-100-N-32			UPR-100-N-9, UPR-100-N-14	
100-NR-1	UPR-100-N-33			120-N-1	
100-NR-1	UPR-100-N-34			120-N-1	

Analogous Sites

Operable Unit	Site Number	LFI	Data	Analogous Sites	Comments
100-NR-1	UPR-100-N-35			UPR-100-N-9, UPR-100-N-14	
100-NR-1	UPR-600-17			130-D-1	
300-FF-1	Ash Pits	X	X	N/A	
300-FF-1	Filter Backwash Ponds	X	X	N/A	
300-FF-1	Process Sewer System	X		316-1, 316-2	Site not listed in WIDS database, listed in OU-300-FF-1 Phase I Remdial Investigation
300-FF-1	Retired Filter Backwash Ponds	X		Filter Backwash Ponds	
300-FF-1	Sanitary Sewer System	X	X	N/A	
300-FF-1	316-1	X	X	N/A	
300-FF-1	316-2	X	X	N/A	
300-FF-1	316-5	X	X	N/A	
300-FF-1	618-4	X	X	N/A	BURIAL GROUND
300-FF-1	618-5	X	X	N/A	BURIAL GROUND
300-FF-1	618-12			316-1, 316-2	
300-FF-2	Vitrification Test Sites			NON-RAD, UNKNOWN (b)	Cleaned to background levels
300-FF-2	600-22			NON-RAD, UNKNOWN (b)	Bombing target with shells
300-FF-2	618-1			618-5	+ small quantities of Pu and fission products
300-FF-2	618-2			618-5	+ small quantities of Pu and fission products
300-FF-2	618-3			618-5	
300-FF-2	618-7			618-5	+ thorium bearing materials
300-FF-2	618-8			618-5	Parking lot was constructed over majority of site
300-FF-2	618-9			618-5	Burial Ground, with 55 gal. drum of uranium products, emptied waste drums, wheel barrow, corrugated siding, process vessels, pipings, two bags of ammonium nitrate, fertilizer (breached), unidentified white powder, and several lead bricks
300-FF-2	618-13			618-5	
300-FF-3	RLWS & 340 Complex			316-1, 316-2	
300-FF-3	Retired Rad. Liquid Waste Sewer			316-1, 316-2	
300-FF-3	300-1			NON-RAD, UNKNOWN (b)	+ PCBs
300-FF-3	307 Retention Basin			316-5	
300-FF-3	309-TW-1			118-B-5	
300-FF-3	309-TW-2			118-B-5	
300-FF-3	309-TW-3			118-B-5	
300-FF-3	315 Retired Sanitary Drain Field			1607-H2 & 1607-H4	
300-FF-3	307 Disposal Trench, 316-3			316-5	
300-FF-3	331 LSL Drain Field			1607-H2 & 1607-H4	
300-FF-3	331 LSL Trench 1			1607-H2 & 1607-H4	

Analogous Sites

Operable Unit	Site Number	LFI	Data	Analogous Sites	Comments
300-FF-3	331 LSL Trench 2			1607-H2 & 1607-H4	
300-FF-3	335 and 336 Retired Sanitary Drain Fields			1607-H2 & 1607-H4	
300-FF-3	618-6			118-B-5	Empty burial ground, moved to 618-10
300-FF-3	Biological Treatment Test Facility			UNKNOWN (a)	Test treatment, Part A permit submitted
300-FF-3	Physical and Chemical Treatment Test Facilities			UNKNOWN (a)	Test treatment, Part A permit submitted
300-FF-3	Thermal Treatment Test Facilities			UNKNOWN (a)	Test treatment, Part A permit submitted
300-FF-3	UPR-300-1			T0 316-1	Moved to 200 area burial ground
300-FF-3	UPR-300-2			UNKNOWN (a)	Cs-137 at approximately 10 mCi.
300-FF-3	UPR-300-4			UNKNOWN (a)	Uranium
300-FF-3	UPR-300-5			UNKNOWN (a)	
300-FF-3	UPR-300-7			UPR-100-N-17	
300-FF-3	UPR-300-10			To 316-1	
300-FF-3	UPR-300-11			To 316-1	RLW, approximately 1 Ci remains
300-FF-3	UPR-300-12			To 316-1	Pr-147, nitrate soil fission products, and TRU
300-FF-3	UPR-300-13			UNKNOWN (a)	Spent process acid, 4432 lb of NO3, 447 lb of copper, and 3 lb uranium (0.005 Ci)
300-FF-3	UPR-300-14			NON-RAD, UNKNOWN (b)	Sulfuric Acid, neutralized
300-FF-3	UPR-300-17			To 618-5	Uranium at 15000 cpm
300-FF-3	UPR-300-18			UNKNOWN (a)	Small amount of cesium
300-FF-3	UPR-300-39			UNKNOWN (a)	Hazardous, caustic with 50% sodium hydroxide
300-FF-3	UPR-300-40			UNKNOWN (a)	Uranium bearing clad waste
300-FF-3	UPR-300-41			UNKNOWN (a)	Spent process acid, NO3, copper, uranium, 14K ppm chromium, 1.9 K ppm manganese, 1.7 K pp, iron, and 0.4 K ppm nickel
300-FF-3	UPR-300-42			UPR-100-N-17	
300-FF-3	UPR-300-43			NON-RAD, UNKNOWN (b)	Solvent refined coal
300-FF-3	UPR-300-44			UNKNOWN (a)	Acid, uranium, copper, and zirconium
300-FF-3	UPR-300-45			UNKNOWN (a)	3480 ppm NO3, 6960 ppm SO4, 920 ppm uranium
300-FF-3	UPR-300-46			UNKNOWN (a)	LLW, unknown source
300-FF-4	400 Area French Drain 10			300 Area Sanitary Sewer System	
300-FF-4	400 Area French Drain 10A			300 Area Sanitary Sewer System	
300-FF-4	400 Area French Drain 1A			300 Area Sanitary Sewer System	
300-FF-4	400 Area French Drain 1B			300 Area Sanitary Sewer System	
300-FF-4	400 Area French Drain 2			300 Area Sanitary Sewer System	
300-FF-4	400 Area French Drain 3			300 Area Sanitary Sewer System	

Analogous Sites

Operable Unit	Site Number	LFI	Data	Analogous Sites	Comments
300-FF-4	400 Area French Drain 4			300 Area Sanitary Sewer System	
300-FF-4	400 Area French Drain 5			300 Area Sanitary Sewer System	
300-FF-4	400 Area French Drain 6			300 Area Sanitary Sewer System	
300-FF-4	400 Area French Drain 7			300 Area Sanitary Sewer System	
300-FF-4	400 Area French Drain 8			300 Area Sanitary Sewer System	
300-FF-4	400 Area French Drain 9			300 Area Sanitary Sewer System	
300-FF-4	400 Area Retired French Drains			300 Area Sanitary Sewer System	
300-FF-4	403 French Drain			300 Area Sanitary Sewer System	
300-FF-4	4713-B French Drain			300 Area Sanitary Sewer System	
300-FF-4	4721 French Drain			300 Area Sanitary Sewer System	
300-FF-4	4722-B French Drain			300 Area Sanitary Sewer System	
300-FF-4	4722-C French Drain			316-1, 316-2	
300-FF-4	400 Area Sanitary Sewer			300 Area Sanitary Sewer System	
300-FF-4	400 Area Sanitary Tile Field			300 Area Sanitary Sewer System	
300-FF-4	400 Area Retired Septic Tanks			1607-H2, 1607-H4	
300-FF-4	400 Area Process Pond and Sewer System			316-1, 316-2	
300-FF-4	400 Area Retired Sanitary Pond			300 Area Sanitary Sewer System	
300-FF-4	400 Area Sand Bottom Trench			300 Area Sanitary Sewer System	
300-FF-4	400-1			NON-HAZ/NON-RAD (c)	
300-FF-4	UPR-400-1			NON-RAD, UNKNOWN (b)	
300-IU-1	618-10			118-B-5	
300-IU-1	618-11			118-B-5	
300-IU-1	JA Jones I			118-B-5	
300-IU-1	316-4			116-D-3 (d), 116-D-6 (d)	
300-IU-1	600-1			NON-RAD, UNKNOWN (b)	
300-IU-1	UPR-600-1 (e)			118-B-5	
300-IU-1	UPR-600-2 (e)			118-B-5	
300-IU-1	UPR-600-3 (e)			118-B-5	
300-IU-1	UPR-600-4 (e)			118-B-5	

Analogous Sites

Operable Unit	Site Number	LFI	Data	Analogous Sites	Comments
300-IU-1	UPR-600-5 (e)			118-B-5	
300-IU-1	UPR-600-6 (e)			118-B-5	
300-IU-1	UPR-600-7 (e)			118-B-5	
300-IU-1	UPR-600-8 (e)			118-B-5	
300-IU-1	UPR-600-9 (e)			118-B-5	
300-IU-1	UPR-600-10 (e)			118-B-5	
300-IU-1	UPR-600-11 (e)			118-B-5	
Non Environmental Restoration Waste Sites					
100-BC-1	118-B-9			108-D	
100-BC-1	132-B-2			118-B-5	Reactor exhaust stack, solid waste, low level
100-BC-1	600-34			NON-HAZ/NON-RAD (c)	Burial ground/Dumping Ground
100-BC-2	118-C-4			UNKNOWN (a)	Concrete tunnel, temp storage facility, 5mR/h at entrance of cave
100-BC-2	600-33			118-B-5	Discarded radioactive test
100-DR-1	132-D-4			118-B-5	Reactor exhaust stack
100-DR-1	108-D	X	X	N/A	Listed in 100-DR-1 LFI, not WIDS database
100-DR-1	Sodium Dichromate Tanks	X	X	N/A	Listed in 100-DR-1 LFI, not WIDS database
100-DR-1	103-D	X	X	N/A	Listed in 100-DR-1 LFI, not WIDS database
100-DR-2	116-D-8			108-D (d)	Storage pad/trace amounts of radionuclides and decontamination chemicals
100-DR-2	122-DR-1			NON-RAD, UNKNOWN (b)	Hazardous waste, sodium, lithium, and potassium
100-DR-2	132-DR-2			118-B-5	Reactor exhaust stack
100-KR-2	116-KE-5			108-D (d)	Piping with traces of radioactive surface contamination
100-KR-2	116-KW-4			108-D (d)	Piping with traces of radioactive surface contamination
100-KR-2	118-KE-2			UNKNOWN (a)	Cave used for storage of radioactive rod tips, now empty. At entrance 1 mR/hr.
100-KR-2	118-KW-2			UNKNOWN (a)	Cave used to store irradiated and radioactively contaminated horizontal rods containing unknown radionuclides. At entrance 50 mR/hr.
100-KR-2	132-KE-1			118-B-5	Reactor exhaust stack, partly demolished
100-KR-2	132-KW-1			118-B-5	Reactor exhaust stack, partly demolished
100-KR-3	120-KE-4			120-N-1	
100-KR-3	120-KE-5			120-N-1	
100-KR-3	120-KW-3			120-N-1	
100-KR-3	120-KW-4			120-N-1	
100-KR-3	126-KE-2			NON-HAZ/NON-RAD (c)	Tank for storing liquid alum
100-KR-3	126-KE-3			NON-HAZ/NON-RAD (c)	Tank for storing liquid alum
100-HR-1	Electiral Facility	X	X	N/A	Listed in 100-HR-1 LFI, not WIDS database
300-FF-1	340 Complex HWSA			108-D (d)	Staging Area, small amounts of oil spilled
300-FF-1	628-4			300 Area Ash Pit	
300-FF-1	UPR-300-FF-1			UNKNOWN (a)	

Analogous Sites

Operable Unit	Site Number	LFI	Data	Analogous Sites	Comments
300-FF-2	Solvent Evaporator			UNKNOWN (a)	Treatment tank for radioactively contaminated spent solvents, mainly trichlorethylene, perchloroethane, ethyl acetate/bromine solution, paint shop solvents, methyl ethyl ketone, methylene chloride, petroleum naphtha
300-FF-3	Interim Filter Backwash Disposal			300 Area Backwash Filters	
300-FF-3	Powerhouse HWSA			108-D (d)	
300-FF-3	303-K Contamination Waste Storage			108-D (d)	
300-FF-3	303-M Storage Area			108-D (d)	Probably uranium
300-FF-3	303-M Uranium Oxide Facility			108-D (d)	Probably uranium
300-FF-3	304 Concretion Facility			108-D (d)	Probably uranium and beryllium
300-FF-3	304 Storage Facility			108-D (d)	Probably uranium and zirconium
300-FF-3	305-B Storage Facility			108-D (d)	Listed, characteristics, and state only wastes
300-FF-3	309-WS-1			UNKNOWN (a)	Reactor ion exchange pit (vault)
300-FF-3	309-WS-2			UNKNOWN (a)	Reactor ion exchange pit (vault)
300-FF-3	311-TK-40			UNKNOWN (a)	
300-FF-3	311-TK-50			UNKNOWN (a)	
300-FF-3	313 Centrifuge			UNKNOWN (a)	Equipment
300-FF-3	313 Copper Remelt Operations			316-5	
300-FF-3	313 East Side Storage Pad			316-5	+ Sodium floride and sodium nitrate
300-FF-3	313 Filter Press			UNKNOWN (a)	Equipment
300-FF-3	313-TK-2			UNKNOWN (a)	Waste acid neutralization tank
300-FF-3	313 Uranium Recovery Operations			UNKNOWN (a)	
300-FF-3	323 Tank 1			UNKNOWN (a)	
300-FF-3	323 Tank 2			UNKNOWN (a)	
300-FF-3	323 Tank 3			UNKNOWN (a)	
300-FF-3	323 Tank 4			UNKNOWN (a)	
300-FF-3	324 Sodium Removal Pilot Plant			NON-RAD, UNKNOWN (b)	RMW alkali metal
300-FF-3	325 Waste Treatment Facility			UNKNOWN (a)	
300-FF-3	331-C HWSA			108-D (d)	
300-FF-3	333 East Side HWSA			108-D (d)	
300-FF-3	333 East Side Heat Treat Salt Storage Area			108-D (d)	
300-FF-3	333 Laydown HWSA			108-D (d)	
300-FF-3	334 Tank Farm Waste Acid Storage			UNKNOWN (a)	Tank, empty

Analogous Sites

Operable Unit	Site Number	LFI	Data	Analogous Sites	Comments
300-FF-3	334-A-TK-B			NON-RAD, UNKNOWN (b)	Contained
300-FF-3	334-A-TK-C			NON-RAD, UNKNOWN (b)	Contained
300-FF-3	350 HWSA			108-D (d)	
300-FF-3	3712 Uranium Scrap Storage Area			108-D (d)	HWSA
300-FF-3	3718-F Burn Shed			300 Area Ash Pits	Sodium, lithium, and potassium
300-FF-3	3718-F Storage Facility			108-D (d)	Sodium, lithium, and potassium
300-FF-3	3718-F Treatment Tank 1			NON-RAD, UNKNOWN (b)	Sodium, lithium, and potassium
300-FF-3	3718-F Treatment Tank 2			NON-RAD, UNKNOWN (b)	Sodium, lithium, and potassium
300-FF-3	3746-D Silver Recovery			316-5	Discharges to 300 Area process trenches
300-FF-3	UPR-300-38			UNKNOWN (a)	Uranium-bearing acid nitric and sulfuric acid, neutralized
300-FF-4	427 HWSA			108-D (d)	
300-FF-4	437 MASF			108-D	
300-FF-4	4713-B HWSA			108-D (d)	
300-FF-4	4722 Paint Shop HWSA			108-D (d)	
300-FF-4	4831 Laydown			108-D (d)	
300-FF-4	4843			108-D	
300-IU-1	600-21			NON-HAZ/NON-RAD (c)	
300-IU-1	600-23			UNKNOWN (a)	
Other Waste Sites					
100-BC-1	118-B-8			NOT INCLUDED	Reactor building
100-BC-2	118-C-3			NOT INCLUDED	Reactor building
100-DR-1	118-D-6			NOT INCLUDED	Reactor building
100-DR-2	118-DR-2			NOT INCLUDED	Reactor building
100-FR-1	118-F-8			NOT INCLUDED	Reactor building
100-HR-1	118-H-6			NOT INCLUDED	Reactor building
100-KR-2	118-KE-1			NOT INCLUDED	Reactor building
100-KR-2	118-KW-1			NOT INCLUDED	Reactor building
100-KR-2	116-KE-6A			CLEAN	Area cleaned to background radiation levels
100-KR-2	116-KE-6B			CLEAN	Area cleaned to background radiation levels
100-KR-2	116-KE-6C			CLEAN	Area cleaned to background radiation levels
100-KR-2	116-KE-6D			CLEAN	Area cleaned to background radiation levels
100-NR-1	116-N-8			CLEAN	Concrete pad, CLEAN
100-NR-1	120-N-4			CLEAN	Concrete pad, cleaned
300-FF-1	UPR-300-8			To Process Sewer System	
300-FF-1	UPR-300-9			To Process Sewer System	

Analogous Sites

Operable Unit	Site Number	LFI	Data	Analogous Sites	Comments
300-FF-1	UPR-300-15			To Process Sewer System	
300-FF-1	UPR-300-19			To Process Sewer System	
300-FF-1	UPR-300-20			To Process Sewer System	
300-FF-1	UPR-300-21			To Process Trench	
300-FF-1	UPR-300-22			To Process Trench	
300-FF-1	UPR-300-23			To Process Trench	
300-FF-1	UPR-300-24			To Process Trench	
300-FF-1	UPR-300-25			To Process Trench	
300-FF-1	UPR-300-26			To Process Trench	
300-FF-1	UPR-300-27			To Process Sewer System	
300-FF-1	UPR-300-28			To Process Trench	
300-FF-1	UPR-300-29			To Process Trench	
300-FF-1	UPR-300-30			To Process Trench	
300-FF-1	UPR-300-31			To Process Sewer System	
300-FF-1	UPR-300-32			To Process Trench	
300-FF-1	UPR-300-33			To Process Trench	
300-FF-1	UPR-300-34			To 316-12 and 316-2	
300-FF-1	UPR-300-35			To 316-12 and 316-2	
300-FF-1	UPR-300-36			To 316-12 and 316-2	
300-FF-1	UPR-300-37			To 316-12 and 316-2	
300-FF-1	UPR-600-15			To 218-W-3A	
300-FF-3	311 Methanol Tank 1			CLEAN	Cleaned and removed
300-FF-3	311 Methanol Tank 2			CLEAN	Cleaned and removed
300-FF-3	313 Methanol Tank			CLEAN	Clean and removed
300-FF-3	333-TK-7			CLEAN	No soil contamination
300-FF-3	333-TK-11			CLEAN	No soil contamination
300-FF-3	333 West Side Waste Oil Tank			CLEAN	No spills, non-hazardous/non-radioactive
300-FF-3	3713 Paint Shop HWSA			CLEAN	Clean, waste has been moved
300-FF-3	3713 Sign Shop HWSA			CLEAN	Clean, waste has been moved

(a) There was no field investigation or analogous sites for these waste sites. Based on WIDS database, there is a potential for radionuclide contamination, levels unknown.

(b) There was no field investigation or analogous sites for these waste sites. Based on WIDS database, there is a potential for non-radioactive, hazardous contamination, levels unknown.

(c) There was no field investigation or analogous sites for these waste sites. Based on WIDS database, there is no potential of contamination by either hazardous or radionuclide constituents.

(d) Although significant differences exist between waste site and identified reference site, the reference site is the best available estimate of the contamination at the waste site.

(e) These sites consist of unplanned releases which are associated with burial grounds. The volumes for these sites have been added to the ER volume estimates. The volumes for these unplanned releases are not included on the WHC volumes, the volumes were determined with the non-ER volume models and calculations.

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APPENDIX H

WASTE CATEGORIZATION TABLES

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Appendix H
Waste Categorization Tables
Qualifier List and Notes

(a) Value is based on EPA Region 3 Toxicity Equivalence Factor, which has been adopted by EPA Region 10.

(b) Value listed is 95% UTL for Hanford soil background, *Preliminary Hanford Site Background: Part 1, Soil Background for Nonradioactive Analytes.*

(c) Value is based on State of Washington Model Toxics Control Act Regulation.

(d) Value is typically found in high concentrations at background levels in soils and is considered to be an essential nutrient to the human body. Therefore, it was not evaluated in this report.

(e) Value is based on the reference dose for food of 0.14 mg/kg/d.

(f) Value listed assumes this compound has the toxicity of pyrene.

(g) Value is based on EPA Region II Toxicity Equivalence Factor.

(h) No value provided for this constituent; this value is assumed to be conservative based on similar constituent values.

(i) Value listed assumes this compound has the toxicity of 4-Nitro Phenol.

(j) Value listed assumes this compound has the toxicity of 4-Methyl-2-Pentanone.

(k) Risk based value is less than the background level, therefore 95% UTL is used.

(l) Sample is not listed in field investigation data; value is assumed to be zero.

(m) This is an older facility; therefore, it is assumed to contain 5% lead.

(n) Value is based on preliminary data from the *Hanford Site Background: Part 2, Soil Background for Nonradioactive Analytes* (Hoover 1993).

(o) Background radiation value is based on sample data from the Vernita site.

(p) LLDs from the *1991 Annual Report of the Environmental Radiation Program of the Department of Health.*

General Note: All volumes listed in the waste categorization tables are in bank units.

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APPENDIX H-1

WASTE CATEGORIZATION TABLES FOR NON-BURIAL GROUND WASTE SITES WITH SOIL

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Reference Site: 108-D

Sub-Project	100-BC	100-DR	100-FR	100-HR	100-KR	100-NR	300-FF	TOTAL
Contaminated Volume (yd3)	107	10,141	9,147	0	830	0	59,890	80,115

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Inorganic	**(mg/kg)**											
Aluminum	230000(a)	0	0	0	0	0	0	0	0	0	0	0
Antimony	31(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Arsenic	8.92(b)	0	0	0	0	0	0	0	0	0	0	0
Barium	5500(a)	0	0	0	0	0	0	0	0	0	0	0
Beryllium	1.77(b)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cadmium	2(c)	0	0	0	0	0	0	0	0	0	0	0
Chromium	100(c)	0	0	0	0	0	0	0	0	0	0	0
Cobalt	(d)	0	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Copper	2900(a)	0	0	0	0	0	0	0	0	0	0	0
Iron	(d)	0	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Lead	250(c)	0	0	5 (m)	5	507	457	0	42	0	2995	4,006
Magnesium	(d)	0	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Manganese	10,900(e)	0	0	0	0	0	0	0	0	0	0	0
Mercury	1.25(b)	0	0	0	0	0	0	0	0	0	0	0
Nickel	1600(a)	0	0	0	0	0	0	0	0	0	0	0
Potassium	(d)	0	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Selenium	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Silver	390(a)	0	(l)	0	0	0	0	0	0	0	0	0
Sodium	(d)	0	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Sulfate	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Thallium	5.5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Site: 108-D

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Vanadium	550(a)	0	0	0	0	0	0	0	0	0	0	0
Zinc	23000(a)	0	0	0	0	0	0	0	0	0	0	0
Organic	**(mg/kg)**											
Acetone	7800(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
Benzene	.5(c)	(1)	(1)	0	0	0	0	0	0	0	0	0
2-Butanone	47000(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
Carbondisulfide	7800(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
1,2-Dichloroethene (total)	700(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
4-Methyl-2-Pentanone	3900(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
Methylene Chloride	.5(c)	(1)	(1)	0	0	0	0	0	0	0	0	0
Tetrachloroethene	.5(c)	(1)	(1)	0	0	0	0	0	0	0	0	0
Toluene	40(c)	(1)	(1)	0	0	0	0	0	0	0	0	0
Trichloroethene	.5(c)	(1)	(1)	0	0	0	0	0	0	0	0	0
Vinyl Chloride	0.63(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
Acenaphthene	4700(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
Anthracene	23000(a)	1	0	0	0	0	0	0	0	0	0	0
Benzo(a)anthracene	1.6(a)	1	0	0	0	0	0	0	0	0	0	0
Benzo(a)pyrene	0.16(a)	1	0	0	0	0	0	0	0	0	0	0
Benzo(b)fluoranthene	1.6(a)	1	0	0	0	0	0	0	0	0	0	0
Benzo(ghi)perylene	2300(f)	1	0	0	0	0	0	0	0	0	0	0
Benzo(k)fluoranthene	1.6(g)	1	0	0	0	0	0	0	0	0	0	0
Benzoic Acid	310000(a)	1	0	0	0	0	0	0	0	0	0	0
Bis (2-ethylhexhl) phthalate	85(a)	1	0	0	0	0	0	0	0	0	0	0
Butylbenzylphthalate	16000(a)	1	0	0	0	0	0	0	0	0	0	0
Carbazole	60(a)	1	0	0	0	0	0	0	0	0	0	0
Carbon Tetracloride	9.2(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
4-Chloro-3-Methylphenol	10(b)	1	0	0	0	0	0	0	0	0	0	0
2-Chlorophenol	390(a)	1	0	0	0	0	0	0	0	0	0	0

Reference Site: 108-D

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Chloroform	200(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Chloroaniline	310(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Chrysene	16(g)	1	0	0	0	0	0	0	0	0	0	0
Di-n-octyl-phthalate	1600(a)	1	0	0	0	0	0	0	0	0	0	0
Di-n-butyl-phthalate	7800(a)	1	0	0	0	0	0	0	0	0	0	0
Dibenzofuran	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,3 Dichlorobenzene	7000(a)	1	0	0	0	0	0	0	0	0	0	0
1,4 Dichlorobenzene	50(a)	1	0	0	0	0	0	0	0	0	0	0
Diethyl phthalate	63000(a)	1	0	0	0	0	0	0	0	0	0	0
Ethylbenzene	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Fluoranthene	3100(a)	1	0	0	0	0	0	0	0	0	0	0
Fluorene	3100(a)	1	0	0	0	0	0	0	0	0	0	0
Indeno(1,2,3-cd)pyrene	1.6(a)	1	0	0	0	0	0	0	0	0	0	0
2-Hexanone	3900(g)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Methylnaphthalene	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Methyphenol	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Naphthalene	3100(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Nitrophenol	4800(i)	1	0	0	0	0	0	0	0	0	0	0
N-Nitrosodiphenylamine	240(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Pentachlorophenol	10(a)	1	0	0	0	0	0	0	0	0	0	0
Phenathrene	2,300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
Phenol	47000(a)	1	0	0	0	0	0	0	0	0	0	0
1,1,1-Trichloroethane	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Pyrene	2300(a)	1	0	0	0	0	0	0	0	0	0	0
Xylenes	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
2,4-D	780(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDD	5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDE	3.5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Site: 108-D

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Aldrin	0.07(a)	1	0	0	0	0	0	0	0	0	0	0
Aroclor-1248	0.16(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
Aroclor-1254	0.16(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
Aroclor-1260	0.16(a)	1	0	0	0	0	0	0	0	0	0	0
Beta-BHC - Lindane	0.92(a)	1	0	0	0	0	0	0	0	0	0	0
Dieldrin	0.075(a)	1	0	0	0	0	0	0	0	0	0	0
Endrin	23(a)	1	0	0	0	0	0	0	0	0	0	0
gamma-Chlordane	0.92(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
Heptachlor	0.27(a)	1	0	0	0	0	0	0	0	0	0	0
Total TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Total Non-TSCA Hazardous Waste (may include mixed waste)					5	507	457	0	42	0	2,995	4,006
Radionuclide	**(pCi/g)**											
Americium-241	.06(x)	(1)	(1)	0	0	0	0	0	0	0	0	0
Beryllium-7	0(z)	(1)	(1)	0	0	0	0	0	0	0	0	0
Carbon-14	0(z)	2	2	100	107	10141	9147	0	830	0	59890	80,115
Cesium-134	.0388(z)	(1)	(1)	0	0	0	0	0	0	0	0	0
Cesium-137	3.517(z)	(1)	(1)	0	0	0	0	0	0	0	0	0
Chromium-51	0(z)	(1)	(1)	0	0	0	0	0	0	0	0	0
Cobalt-58	0(z)	(1)	(1)	0	0	0	0	0	0	0	0	0
Cobalt-60	.0147(z)	(1)	(1)	0	0	0	0	0	0	0	0	0
Europium-152	.04(x)	(1)	(1)	0	0	0	0	0	0	0	0	0
Europium-154	.1151(z)	(1)	(1)	0	0	0	0	0	0	0	0	0
Europium-155	.0781(z)	(1)	(1)	0	0	0	0	0	0	0	0	0
Gross Alpha	8.4(y)	(1)	(1)	0	0	0	0	0	0	0	0	0
Gross Beta	16(y)	(1)	(1)	0	0	0	0	0	0	0	0	0
Plutonium-238	0.0045(z)	(1)	(1)	0	0	0	0	0	0	0	0	0
Plutonium-239/240	.0203(z)	(1)	(1)	0	0	0	0	0	0	0	0	0
Potassium-40	18.48(z)	2	0	0	0	0	0	0	0	0	0	0

Reference Site: 108-D

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Radium-226	1.037(z)	2	0	0	0	0	0	0	0	0	0	0
Sodium-22	0(z)	(l)	(l)	0	0	0	0	0	0	0	0	0
Strontium-90	0.3135(z)	(l)	(l)	0	0	0	0	0	0	0	0	0
Technetium-99	0(z)	(l)	(l)	0	0	0	0	0	0	0	0	0
Thorium-228	2.5(y)	1	0	0	0	0	0	0	0	0	0	0
Thorium-232	1.308(z)	1	0	0	0	0	0	0	0	0	0	0
Uranium-233/234	1.366(z)	(l)	(l)	0	0	0	0	0	0	0	0	0
Uranium-235	.0507(z)	(l)	(l)	0	0	0	0	0	0	0	0	0
Uranium-238	1.388(z)	(l)	(l)	0	0	0	0	0	0	0	0	0
Total Radioactive Waste (may include mixed waste)					107	10,141	9,147	0	830	0	59,890	80,115

Summary

Total TSCA Mixed Waste	0	0	0	0	0	0	0	0
Total Non-TSCA Mixed Waste	5	507	457	0	42	0	2,995	4,006
Total Mixed Waste	5	507	457	0	42	0	2,995	4,006
Total Non-Radioactive TSCA Hazardous Waste	0	0	0	0	0	0	0	0
Total Non-Radioactive Hazardous Waste (Non-TSCA)	0	0	0	0	0	0	0	0
Total Hazardous Waste (Non-Radioactive)	0	0	0	0	0	0	0	0
Total Radioactive Waste (Non-Hazardous)	102	9,634	8,690	0	789	0	56,896	76,109

Reference Sites: 116-B-2, 116-D-1A, 116-D-1B

Sub-Project	100-BC	100-DR	100-FR	100-HR	100-KR	100-NR	300-FF	TOTAL
Contaminated Volume (yd3)	6,848	6,121	1,302	0	2,386	0	0	16,657

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Inorganic	**(mg/kg)**											
Aluminum	230000(a)	28	0	0	0	0	0	0	0	0	0	0
Antimony	31(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Arsenic	8.92(b)	28	0	0	0	0	0	0	0	0	0	0
Barium	5500(a)	31	0	0	0	0	0	0	0	0	0	0
Beryllium	1.77(b)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cadmium	2(c)	28	0	0	0	0	0	0	0	0	0	0
Chromium	100(c)	31	2	6	442	395	84	0	154	0	0	1,075
Cobalt	(d)	28	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Copper	2900(a)	31	0	0	0	0	0	0	0	0	0	0
Iron	(d)	31	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Lead	250(c)	31	0	0	0	0	0	0	0	0	0	0
Magnesium	(d)	28	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Manganese	10,900(e)	31	0	0	0	0	0	0	0	0	0	0
Mercury	1.25(b)	31	0	0	0	0	0	0	0	0	0	0
Nickel	1600(a)	31	0	0	0	0	0	0	0	0	0	0
Potassium	(d)	28	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Selenium	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Silver	390(a)	31	0	0	0	0	0	0	0	0	0	0
Sodium	(d)	28	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Sulfate	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Thallium	5.5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Sites: 116-B-2, 116-D-1A, 116-D-1B

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Vanadium	550(a)	28	0	0	0	0	0	0	0	0	0	0
Zinc	23000(a)	31	0	0	0	0	0	0	0	0	0	0
Organic	**(mg/kg)**											
Acetone	7800(a)	36	0	0	0	0	0	0	0	0	0	0
Benzene	.5(c)	3	0	0	0	0	0	0	0	0	0	0
2-Butanone	47000(a)	36	0	0	0	0	0	0	0	0	0	0
Carbondisulfide	7800(a)	3	0	0	0	0	0	0	0	0	0	0
1,2-Dichloroethene (total)	700(a)	36	(l)	0	0	0	0	0	0	0	0	0
4-Methyl-2-Pentanone	3900(a)	33	0	0	0	0	0	0	0	0	0	0
Methylene Chloride	.5(c)	33	0	0	0	0	0	0	0	0	0	0
Tetrachloroethene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Toluene	40(c)	36	1	3	190	170	36	0	66	0	0	463
Trichloroethene	.5(c)	33	0	0	0	0	0	0	0	0	0	0
Vinyl Chloride	0.63(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Acenaphthene	4700(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Anthracene	23000(a)	34	0	0	0	0	0	0	0	0	0	0
Benzo(a)anthracene	1.6(a)	34	0	0	0	0	0	0	0	0	0	0
Benzo(a)pyrene	0.16(a)	34	0	0	0	0	0	0	0	0	0	0
Benzo(b)fluoranthene	1.6(a)	34	0	0	0	0	0	0	0	0	0	0
Benzo(ghi)perylene	2300(f)	31	0	0	0	0	0	0	0	0	0	0
Benzo(k)fluoranthene	1.6(g)	34	0	0	0	0	0	0	0	0	0	0
Benzoic Acid	310000(a)	31	0	0	0	0	0	0	0	0	0	0
Bis (2-ethylhexhl) phthalate	85(a)	31	0	0	0	0	0	0	0	0	0	0
Butylbenzylphthalate	16000(a)	31	0	0	0	0	0	0	0	0	0	0
Carbazole	60(a)	19	0	0	0	0	0	0	0	0	0	0
Carbon Tetracloride	9.2(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Chloro-3-Methylphenol	10(h)	31	0	0	0	0	0	0	0	0	0	0
2-Chlorophenol	390(a)	31	0	0	0	0	0	0	0	0	0	0

Reference Sites: 116-B-2, 116-D-1A, 116-D-1B

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Chloroform	200(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Chloroaniline	310(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Chrysene	16(g)	34	0	0	0	0	0	0	0	0	0	0
Di-n-octyl-phthalate	1600(a)	31	0	0	0	0	0	0	0	0	0	0
Di-n-butyl-phthalate	7800(a)	31	0	0	0	0	0	0	0	0	0	0
Dibenzofuran	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,3 Dichlorobenzene	7000(a)	31	0	0	0	0	0	0	0	0	0	0
1,4 Dichlorobenzene	50(a)	31	0	0	0	0	0	0	0	0	0	0
Diethyl phthalate	63000(a)	31	0	0	0	0	0	0	0	0	0	0
Ethylbenzene	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Fluoranthene	3100(a)	34	0	0	0	0	0	0	0	0	0	0
Fluorene	3100(a)	31	0	0	0	0	0	0	0	0	0	0
Indeno(1,2,3-cd)pyrene	1.6(a)	31	0	0	0	0	0	0	0	0	0	0
2-Hexanone	3900(g)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Methylnaphthalene	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Methyphenol	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Naphthalene	3100(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Nitrophenol	4800(i)	31	0	0	0	0	0	0	0	0	0	0
N-Nitrosodiphenylamine	240(a)	3	0	0	0	0	0	0	0	0	0	0
Pentachlorophenol	10(a)	34	0	0	0	0	0	0	0	0	0	0
Phenathrene	2,300(f)	3	0	0	0	0	0	0	0	0	0	0
Phenol	47000(a)	31	0	0	0	0	0	0	0	0	0	0
1,1,1-Trichloroethane	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Pyrene	2300(a)	34	0	0	0	0	0	0	0	0	0	0
Xylenes	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
2,4-D	780(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDD	5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDE	3.5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Sites: 116-B-2, 116-D-1A, 116-D-1B

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Aldrin	0.07(a)	30	0	0	0	0	0	0	0	0	0	0
Aroclor-1248	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1254	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1260	0.16(a)	30	0	0	0	0	0	0	0	0	0	0
Beta-BHC - Lindane	0.92(a)	30	0	0	0	0	0	0	0	0	0	0
Dieldrin	0.075(a)	30	0	0	0	0	0	0	0	0	0	0
Endrin	23(a)	30	0	0	0	0	0	0	0	0	0	0
gamma-Chlordane	0.92(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Heptachlor	0.27(a)	30	0	0	0	0	0	0	0	0	0	0
Total TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Total Non-TSCA Hazardous Waste (may include mixed waste)					442	395	84	0	154	0	0	1,075
Radionuclide	**(pCi/g)**											
Americium-241	.06(p)	26	23	88	6,058	5,415	1,152	0	2,111	0	0	14,735
Beryllium-7	0(n)	23	4	17	1,191	1,065	226	0	415	0	0	2,897
Carbon-14	0(n)	31	26	84	5,743	5,134	1,092	0	2,001	0	0	13,970
Cesium-134	.0388(n)	3	0	0	0	0	0	0	0	0	0	0
Cesium-137	3.517(n)	30	20	67	4,565	4,081	868	0	1,591	0	0	11,105
Chromium-51	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt-58	0(n)	23	9	39	2,680	2,395	509	0	934	0	0	6,518
Cobalt-60	.0147(n)	28	22	79	5,381	4,809	1,023	0	1,875	0	0	13,088
Europium-152	.04(p)	28	28	100	6,848	6,121	1,302	0	2,386	0	0	16,657
Europium-154	.1151(n)	26	26	100	6,848	6,121	1,302	0	2,386	0	0	16,657
Europium-155	.0781(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Gross Alpha	8.4(o)	34	15	44	3,021	2,700	574	0	1,053	0	0	7,349
Gross Beta	16(o)	34	32	94	6,445	5,761	1,225	0	2,246	0	0	15,677
Plutonium-238	0.0045(n)	3	2	67	4,565	4,081	868	0	1,591	0	0	11,105
Plutonium-239/240	.0203(n)	26	24	92	6,321	5,650	1,202	0	2,202	0	0	15,376
Potassium-40	18.48(n)	30	0	0	0	0	0	0	0	0	0	0

Reference Sites: 116-B-2, 116-D-1A, 116-D-1B

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Radium-226	1.037(n)	26	6	23	1,580	1,413	300	0	551	0	0	3,844
Sodium-22	0(n)	23	23	100	6,848	6,121	1,302	0	2,386	0	0	16,657
Strontium-90	0.3135(n)	34	28	82	5,640	5,041	1,072	0	1,965	0	0	13,718
Technetium-99	0(n)	29	10	34	2,361	2,111	449	0	823	0	0	5,744
Thorium-228	2.5(o)	30	0	0	0	0	0	0	0	0	0	0
Thorium-232	1.308(n)	2	0	0	0	0	0	0	0	0	0	0
Uranium-233/234	1.366(n)	3	0	0	0	0	0	0	0	0	0	0
Uranium-235	.0507(n)	26	0	0	0	0	0	0	0	0	0	0
Uranium-238	1.388(n)	26	0	0	0	0	0	0	0	0	0	0
Total Radioactive Waste (may include mixed waste)					6,848	6,121	1,302	0	2,386	0	0	16,657
Summary												
Total TSCA Mixed Waste					0	0	0	0	0	0	0	0
Total Non-TSCA Mixed Waste					442	395	84	0	154	0	0	1,075
Total Mixed Waste					442	395	84	0	154	0	0	1,075
Total Non-Radioactive TSCA Hazardous Waste					0	0	0	0	0	0	0	0
Total Non-Radioactive Hazardous Waste (Non-TSCA)					0	0	0	0	0	0	0	0
Total Hazardous Waste (Non-Radioactive)					0	0	0	0	0	0	0	.0
Total Radioactive Waste (Non-Hazardous)					6,406	5,726	1,218	0	2,232	0	0	15,582

Reference Sites: 116-B-3, 116-D-2

Sub-Project	100-BC	100-DR	100-FR	100-HR	100-KR	100-NR	300-FF	TOTAL
Contaminated Volume (yd3)	5,649	255	194	0	1,403	0	0	7,501

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Inorganic	**(mg/kg)**											
Aluminum	230000(a)	4	0	0	0	0	0	0	0	0	0	0
Antimony	31(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Arsenic	8.92(b)	4	0	0	0	0	0	0	0	0	0	0
Barium	5500(a)	10	0	0	0	0	0	0	0	0	0	0
Beryllium	1.77(b)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cadmium	2(c)	4	0	0	0	0	0	0	0	0	0	0
Chromium	100(c)	10	0	0	0	0	0	0	0	0	0	0
Cobalt	(d)	4	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Copper	2900(a)	10	0	0	0	0	0	0	0	0	0	0
Iron	(d)	10	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Lead	250(c)	10	0	0	0	0	0	0	0	0	0	0
Magnesium	(d)	4	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Manganese	10,900(e)	10	0	0	0	0	0	0	0	0	0	0
Mercury	1.25(b)	10	0	0	0	0	0	0	0	0	0	0
Nickel	1600(a)	10	0	0	0	0	0	0	0	0	0	0
Potassium	(d)	4	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Selenium	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Silver	390(a)	10	0	0	0	0	0	0	0	0	0	0
Sodium	(d)	4	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Sulfate	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Thallium	5.5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Sites: 116-B-3, 116-D-2

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Vanadium	550(a)	4	0	0	0	0	0	0	0	0	0	0
Zinc	23000(a)	10	0	0	0	0	0	0	0	0	0	0
Organic	**(mg/kg)**											
Acetone	7800(a)	11	0	0	0	0	0	0	0	0	0	0
Benzene	.5(c)	6	0	0	0	0	0	0	0	0	0	0
2-Butanone	47000(a)	9	0	0	0	0	0	0	0	0	0	0
Carbondisulfide	7800(a)	6	0	0	0	0	0	0	0	0	0	0
1,2-Dichloroethene (total)	700(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Methyl-2-Pentanone	3900(a)	9	0	0	0	0	0	0	0	0	0	0
Methylene Chloride	.5(c)	3	0	0	0	0	0	0	0	0	0	0
Tetrachloroethene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Toluene	40(c)	9	0	0	0	0	0	0	0	0	0	0
Trichloroethene	.5(c)	3	0	0	0	0	0	0	0	0	0	0
Vinyl Chloride	0.63(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Acenaphthene	4700(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Anthracene	23000(a)	9	0	0	0	0	0	0	0	0	0	0
Benzo(a)anthracene	1.6(a)	9	0	0	0	0	0	0	0	0	0	0
Benzo(a)pyrene	0.16(a)	9	0	0	0	0	0	0	0	0	0	0
Benzo(b)fluoranthene	1.6(a)	11	0	0	0	0	0	0	0	0	0	0
Benzo(ghi)perylene	2300(f)	5	0	0	0	0	0	0	0	0	0	0
Benzo(k)fluoranthene	1.6(g)	11	0	0	0	0	0	0	0	0	0	0
Benzoic Acid	310000(a)	5	0	0	0	0	0	0	0	0	0	0
Bis (2-ethylhexhl) phthalate	85(a)	5	0	0	0	0	0	0	0	0	0	0
Butylbenzylphthalate	16000(a)	5	0	0	0	0	0	0	0	0	0	0
Carbazole	60(a)	5	0	0	0	0	0	0	0	0	0	0
Carbon Tetracloride	9.2(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Chloro-3-Methylphenol	10(h)	5	0	0	0	0	0	0	0	0	0	0
2-Chlorophenol	390(a)	5	0	0	0	0	0	0	0	0	0	0

Reference Sites: 116-B-3, 116-D-2

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Chloroform	200(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Chloroaniline	310(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Chrysene	16(g)	11	0	0	0	0	0	0	0	0	0	0
Di-n-octyl-phthalate	1600(a)	5	0	0	0	0	0	0	0	0	0	0
Di-n-butyl-phthalate	7800(a)	5	0	0	0	0	0	0	0	0	0	0
Dibenzofuran	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,3 Dichlorobenzene	7000(a)	5	0	0	0	0	0	0	0	0	0	0
1,4 Dichlorobenzene	50(a)	5	0	0	0	0	0	0	0	0	0	0
Diethyl phthalate	63000(a)	5	0	0	0	0	0	0	0	0	0	0
Ethylbenzene	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Fluoranthene	3100(a)	11	0	0	0	0	0	0	0	0	0	0
Fluorene	3100(a)	5	0	0	0	0	0	0	0	0	0	0
Indeno(1,2,3-cd)pyrene	1.6(a)	5	0	0	0	0	0	0	0	0	0	0
2-Hexanone	3900(g)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Methylnaphthalene	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Methyphenol	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Naphthalene	3100(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Nitrophenol	4800(i)	5	0	0	0	0	0	0	0	0	0	0
N-Nitrosodiphenylamine	240(a)	6	0	0	0	0	0	0	0	0	0	0
Pentachlorophenol	10(a)	11	0	0	0	0	0	0	0	0	0	0
Phenathrene	2,300(f)	6	0	0	0	0	0	0	0	0	0	0
Phenol	47000(a)	5	0	0	0	0	0	0	0	0	0	0
1,1,1-Trichloroethane	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Pyrene	2300(a)	11	0	0	0	0	0	0	0	0	0	0
Xylenes	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
2,4-D	780(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDD	5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDE	3.5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Sites: 116-B-3, 116-D-2

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Aldrin	0.07(a)	5	0	0	0	0	0	0	0	0	0	0
Aroclor-1248	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1254	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1260	0.16(a)	5	0	0	0	0	0	0	0	0	0	0
Beta-BHC - Lindane	0.92(a)	5	0	0	0	0	0	0	0	0	0	0
Dieldrin	0.075(a)	5	0	0	0	0	0	0	0	0	0	0
Endrin	23(a)	5	0	0	0	0	0	0	0	0	0	0
gamma-Chlordane	0.92(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Heptachlor	0.27(a)	5	0	0	0	0	0	0	0	0	0	0
Total TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Total Non-TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Radionuclide	**(pCi/g)**											
Americium-241	.06(p)	10	2	20	1,130	51	39	0	281	0	0	1,500
Beryllium-7	0(n)	4	0	0	0	0	0	0	0	0	0	0
Carbon-14	0(n)	10	3	30	1,695	77	58	0	421	0	0	2,250
Cesium-134	.0388(n)	6	0	0	0	0	0	0	0	0	0	0
Cesium-137	3.517(n)	10	8	80	4,519	204	155	0	1,122	0	0	6,001
Chromium-51	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt-58	0(n)	4	0	0	0	0	0	0	0	0	0	0
Cobalt-60	.0147(n)	10	2	20	1,130	51	39	0	281	0	0	1,500
Europium-152	.04(p)	5	3	60	3,389	153	116	0	842	0	0	4,501
Europium-154	.1151(n)	5	2	40	2,260	102	78	0	561	0	0	3,000
Europium-155	.0781(n)	1	0	0	0	0	0	0	0	0	0	0
Gross Alpha	8.4(o)	10	0	0	0	0	0	0	0	0	0	0
Gross Beta	16(o)	10	7	70	3,954	179	136	0	982	0	0	5,251
Plutonium-238	0.0045(n)	6	4	67	3,766	170	129	0	935	0	0	5,001
Plutonium-239/240	.0203(n)	10	8	80	4,519	204	155	0	1,122	0	0	6,001
Potassium-40	18.48(n)	10	0	0	0	0	0	0	0	0	0	0

Reference Sites: 116-B-3, 116-D-2

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Radium-226	1.037(n)	10	2	20	1,130	51	39	0	281	0	0	1,500
Sodium-22	0(n)	2	2	100	5,649	255	194	0	1,403	0	0	7,501
Strontium-90	0.3135(n)	10	9	90	5,084	230	175	0	1,263	0	0	6,751
Technetium-99	0(n)	4	2	50	2,825	128	97	0	702	0	0	3,751
Thorium-228	2.5(o)	10	0	0	0	0	0	0	0	0	0	0
Thorium-232	1.308(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Uranium-233/234	1.366(n)	6	0	0	0	0	0	0	0	0	0	0
Uranium-235	.0507(n)	10	0	0	0	0	0	0	0	0	0	0
Uranium-238	1.388(n)	10	0	0	0	0	0	0	0	0	0	0
Total Radioactive Waste (may include mixed waste)					5,649	255	194	0	1,403	0	0	7,501
Summary												
Total TSCA Mixed Waste					0	0	0	0	0	0	0	0
Total Non-TSCA Mixed Waste					0	0	0	0	0	0	0	0
Total Mixed Waste					0	0	0	0	0	0	0	0
Total Non-Radioactive TSCA Hazardous Waste					0	0	0	0	0	0	0	0
Total Non-Radioactive Hazardous Waste (Non-TSCA)					0	0	0	0	0	0	0	0
Total Hazardous Waste (Non-Radioactive)					0	0	0	0	0	0	0	0
Total Radioactive Waste (Non-Hazardous)					5,649	255	194	0	1,403	0	0	7,501

Reference Site: 116-B-5

Sub-Project	100-BC	100-DR	100-FR	100-HR	100-KR	100-NR	300-FF	TOTAL
Contaminated Volume (yd3)	3,660	0	0	0	0	0	0	3,660

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Inorganic	**(mg/kg)**											
Aluminum	230000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Antimony	31(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Arsenic	8.92(b)	(l)	(l)	0	0	0	0	0	0	0	0	0
Barium	5500(a)	6	0	0	0	0	0	0	0	0	0	0
Beryllium	1.77(b)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cadmium	2(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Chromium	100(c)	6	0	0	0	0	0	0	0	0	0	0
Cobalt	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Copper	2900(a)	6	0	0	0	0	0	0	0	0	0	0
Iron	(d)	6	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Lead	250(c)	6	0	0	0	0	0	0	0	0	0	0
Magnesium	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Manganese	10,900(e)	6	0	0	0	0	0	0	0	0	0	0
Mercury	1.25(b)	6	6	100	3,660	0	0	0	0	0	0	3,660
Nickel	1600(a)	6	0	0	0	0	0	0	0	0	0	0
Potassium	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Selenium	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Silver	390(a)	6	0	0	0	0	0	0	0	0	0	0
Sodium	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Sulfate	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Thallium	5.5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Site: 116-B-5

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Vanadium	550(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Zinc	23000(a)	6	0	0	0	0	0	0	0	0	0	0
Organic	**(mg/kg)**											
Acetone	7800(a)	6	0	0	0	0	0	0	0	0	0	0
Benzene	.5(c)	6	0	0	0	0	0	0	0	0	0	0
2-Butanone	47000(a)	6	0	0	0	0	0	0	0	0	0	0
Carbondisulfide	7800(a)	6	0	0	0	0	0	0	0	0	0	0
1,2-Dichloroethene (total)	700(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Methyl-2-Pentanone	3900(a)	6	0	0	0	0	0	0	0	0	0	0
Methylene Chloride	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Tetrachloroethene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Toluene	40(c)	6	0	0	0	0	0	0	0	0	0	0
Trichloroethene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Vinyl Chloride	0.63(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Acenaphthene	4700(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Anthracene	23000(a)	6	0	0	0	0	0	0	0	0	0	0
Benzo(a)anthracene	1.6(a)	6	0	0	0	0	0	0	0	0	0	0
Benzo(a)pyrene	0.16(a)	6	0	0	0	0	0	0	0	0	0	0
Benzo(b)fluoranthene	1.6(a)	6	0	0	0	0	0	0	0	0	0	0
Benzo(ghi)perylene	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
Benzo(k)fluoranthene	1.6(g)	6	0	0	0	0	0	0	0	0	0	0
Benzoic Acid	310000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Bis (2-ethylhexhl) phthalate	85(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Butylbenzylphthalate	16000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbazole	60(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbon Tetracloride	9.2(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Chloro-3-Methylphenol	10(h)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Chlorophenol	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Site: 116-B-5

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Chloroform	200(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Chloroaniline	310(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Chrysene	16(g)	6	0	0	0	0	0	0	0	0	0	0
Di-n-octyl-phthalate	1600(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Di-n-butyl-phthalate	7800(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Dibenzofuran	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,3 Dichlorobenzene	7000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,4 Dichlorobenzene	50(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Diethyl phthalate	63000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Ethylbenzene	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Fluoranthene	3100(a)	6	0	0	0	0	0	0	0	0	0	0
Fluorene	3100(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Indeno(1,2,3-cd)pyrene	1.6(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Hexanone	3900(g)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Methylnaphthalene	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Methyphenol	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Naphthalene	3100(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Nitrophenol	4800(i)	(l)	(l)	0	0	0	0	0	0	0	0	0
N-Nitrosodiphenylamine	240(a)	6	0	0	0	0	0	0	0	0	0	0
Pentachlorophenol	10(a)	6	0	0	0	0	0	0	0	0	0	0
Phenathrene	2,300(f)	6	0	0	0	0	0	0	0	0	0	0
Phenol	47000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,1,1-Trichloroethane	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Pyrene	2300(a)	6	0	0	0	0	0	0	0	0	0	0
Xylenes	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
2,4-D	780(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDD	5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDE	3.5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Site: 116-B-5

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Aldrin	0.07(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1248	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1254	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1260	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Beta-BHC - Lindane	0.92(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Dieldrin	0.075(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Endrin	23(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
gamma-Chlordane	0.92(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Heptachlor	0.27(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Total TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Total Non-TSCA Hazardous Waste (may include mixed waste)					3,660	0	0	0	0	0	0	3,660
Radionuclide	**(pCi/g)**											
Americium-241	.06(p)	6	0	0	0	0	0	0	0	0	0	0
Beryllium-7	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbon-14	0(n)	6	0	0	0	0	0	0	0	0	0	0
Cesium-134	.0388(n)	6	0	0	0	0	0	0	0	0	0	0
Cesium-137	3.517(n)	6	0	0	0	0	0	0	0	0	0	0
Chromium-51	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt-58	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt-60	.0147(n)	6	6	100	3,660	0	0	0	0	0	0	3,660
Europium-152	.04(p)	5	5	100	3,660	0	0	0	0	0	0	3,660
Europium-154	.1151(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Europium-155	.0781(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Gross Alpha	8.4(o)	6	0	0	0	0	0	0	0	0	0	0
Gross Beta	16(o)	6	0	0	0	0	0	0	0	0	0	0
Plutonium-238	0.0045(n)	6	0	0	0	0	0	0	0	0	0	0
Plutonium-239/240	.0203(n)	6	0	0	0	0	0	0	0	0	0	0
Potassium-40	18.48(n)	6	0	0	0	0	0	0	0	0	0	0

Reference Site: 116-B-5

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Radium-226	1.037(n)	6	0	0	0	0	0	0	0	0	0	0
Sodium-22	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Strontium-90	0.3135(n)	6	0	0	0	0	0	0	0	0	0	0
Technetium-99	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Thorium-228	2.5(o)	6	0	0	0	0	0	0	0	0	0	0
Thorium-232	1.308(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Uranium-233/234	1.366(n)	6	0	0	0	0	0	0	0	0	0	0
Uranium-235	.0507(n)	6	0	0	0	0	0	0	0	0	0	0
Uranium-238	1.388(n)	6	0	0	0	0	0	0	0	0	0	0
Total Radioactive Waste (may include mixed waste)					3,660	0	0	0	0	0	0	3,660
Summary												
Total TSCA Mixed Waste					0	0	0	0	0	0	0	0
Total Non-TSCA Mixed Waste					3,660	0	0	0	0	0	0	3,660
Total Mixed Waste					3,660	0	0	0	0	0	0	3,660
Total Non-Radioactive TSCA Hazardous Waste					0	0	0	0	0	0	0	0
Total Non-Radioactive Hazardous Waste (Non-TSCA)					0	0	0	0	0	0	0	0
Total Hazardous Waste (Non-Radioactive)					0	0	0	0	0	0	0	0
Total Radioactive Waste (Non-Hazardous)					0	0	0	0	0	0	0	0

Reference Sites: 116-C-5, 116-D-7, 116-DR-9

Sub-Project	100-BC	100-DR	100-FR	100-HR	100-KR	100-NR	300-FF	TOTAL
Contaminated Volume (yd3)	932,145	827,593	349,031	558,604	1,478,213	0	0	4,145,586

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Inorganic	**(mg/kg)**											
Aluminum	230000(a)	23	0	0	0	0	0	0	0	0	0	0
Antimony	31(a)	9	0	0	0	0	0	0	0	0	0	0
Arsenic	8.92(b)	32	4	13	116,518	103,449	43,629	69,825	184,777	0	0	518,198
Barium	5500(a)	36	0	0	0	0	0	0	0	0	0	0
Beryllium	1.77(b)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cadmium	2(c)	32	0	0	0	0	0	0	0	0	0	0
Chromium	100(c)	36	0	0	0	0	0	0	0	0	0	0
Cobalt	(d)	36	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Copper	2900(a)	36	0	0	0	0	0	0	0	0	0	0
Iron	(d)	27	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Lead	250(c)	38	2	5	49,060	43,558	18,370	29,400	77,801	0	0	218,189
Magnesium	(d)	23	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Manganese	10,900(e)	27	0	0	0	0	0	0	0	0	0	0
Mercury	1.25(b)	36	0	0	0	0	0	0	0	0	0	0
Nickel	1600(a)	36	0	0	0	0	0	0	0	0	0	0
Potassium	(d)	23	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Selenium	390(a)	9	0	0	0	0	0	0	0	0	0	0
Silver	390(a)	36	0	0	0	0	0	0	0	0	0	0
Sodium	(d)	23	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Sulfate	(d)	0	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Thallium	5.5(a)	9	0	0	0	0	0	0	0	0	0	0

Reference Sites: 116-C-5, 116-D-7, 116-DR-9

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Vanadium	550(a)	23	0	0	0	0	0	0	0	0	0	0
Zinc	23000(a)	36	0	0	0	0	0	0	0	0	0	0
Organic	**(mg/kg)**											
Acetone	7800(a)	37	0	0	0	0	0	0	0	0	0	0
Benzene	.5(c)	5	0	0	0	0	0	0	0	0	0	0
2-Butanone	47000(a)	28	0	0	0	0	0	0	0	0	0	0
Carbondisulfide	7800(a)	5	0	0	0	0	0	0	0	0	0	0
1,2-Dichloroethene (total)	700(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Methyl-2-Pentanone	3900(a)	28	0	0	0	0	0	0	0	0	0	0
Methylene Chloride	.5(c)	32	0	0	0	0	0	0	0	0	0	0
Tetrachloroethene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Toluene	40(c)	37	0	0	0	0	0	0	0	0	0	0
Trichloroethene	.5(c)	23	0	0	0	0	0	0	0	0	0	0
Vinyl Chloride	0.63(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Acenaphthene	4700(a)	9	0	0	0	0	0	0	0	0	0	0
Anthracene	23000(a)	37	0	0	0	0	0	0	0	0	0	0
Benzo(a)anthracene	1.6(a)	37	0	0	0	0	0	0	0	0	0	0
Benzo(a)pyrene	0.16(a)	37	0	0	0	0	0	0	0	0	0	0
Benzo(b)fluoranthene	1.6(a)	37	0	0	0	0	0	0	0	0	0	0
Benzo(ghi)perylene	2300(f)	32	0	0	0	0	0	0	0	0	0	0
Benzo(k)fluoranthene	1.6(g)	37	0	0	0	0	0	0	0	0	0	0
Benzoic Acid	310000(a)	23	0	0	0	0	0	0	0	0	0	0
Bis (2-ethylhexhl) phthalate	85(a)	32	0	0	0	0	0	0	0	0	0	0
Butylbenzylphthalate	16000(a)	32	0	0	0	0	0	0	0	0	0	0
Carbazole	60(a)	23	0	0	0	0	0	0	0	0	0	0
Carbon Tetracloride	9.2(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Chloro-3-Methylphenol	10(h)	23	0	0	0	0	0	0	0	0	0	0
2-Chlorophenol	390(a)	23	0	0	0	0	0	0	0	0	0	0

Reference Sites: 116-C-5, 116-D-7, 116-DR-9

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Chloroform	200(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Chloroaniline	310(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Chrysene	16(g)	37	0	0	0	0	0	0	0	0	0	0
Di-n-octyl-phthalate	1600(a)	23	0	0	0	0	0	0	0	0	0	0
Di-n-butyl-phthalate	7800(a)	23	0	0	0	0	0	0	0	0	0	0
Dibenzofuran	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,3 Dichlorobenzene	7000(a)	23	0	0	0	0	0	0	0	0	0	0
1,4 Dichlorobenzene	50(a)	23	0	0	0	0	0	0	0	0	0	0
Diethyl phthalate	63000(a)	23	0	0	0	0	0	0	0	0	0	0
Ethylbenzene	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Fluoranthene	3100(a)	37	0	0	0	0	0	0	0	0	0	0
Fluorene	3100(a)	32	0	0	0	0	0	0	0	0	0	0
Indeno(1,2,3-cd)pyrene	1.6(a)	32	0	0	0	0	0	0	0	0	0	0
2-Hexanone	3900(g)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Methylnaphthalene	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Methyphenol	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Naphthalene	3100(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Nitrophenol	4800(i)	23	0	0	0	0	0	0	0	0	0	0
N-Nitrosodiphenylamine	240(a)	5	0	0	0	0	0	0	0	0	0	0
Pentachlorophenol	10(a)	28	0	0	0	0	0	0	0	0	0	0
Phenathrene	2,300(f)	14	0	0	0	0	0	0	0	0	0	0
Phenol	47000(a)	23	0	0	0	0	0	0	0	0	0	0
1,1,1-Trichloroethane	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Pyrene	2300(a)	37	0	0	0	0	0	0	0	0	0	0
Xylenes	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
2,4-D	780(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDD	5(a)	9	0	0	0	0	0	0	0	0	0	0
4,4'DDE	3.5(a)	9	0	0	0	0	0	0	0	0	0	0

Reference Sites: 116-C-5, 116-D-7, 116-DR-9

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Aldrin	0.07(a)	23	0	0	0	0	0	0	0	0	0	0
Aroclor-1248	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1254	0.16(a)	9	0	0	0	0	0	0	0	0	0	0
Aroclor-1260	0.16(a)	32	0	0	0	0	0	0	0	0	0	0
Beta-BHC - Lindane	0.92(a)	23	0	0	0	0	0	0	0	0	0	0
Dieldrin	0.075(a)	23	0	0	0	0	0	0	0	0	0	0
Endrin	23(a)	23	0	0	0	0	0	0	0	0	0	0
gamma-Chlordane	0.92(a)	9	0	0	0	0	0	0	0	0	0	0
Heptachlor	0.27(a)	23	0	0	0	0	0	0	0	0	0	0
Total TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Total Non-TSCA Hazardous Waste (may include mixed waste)					116,518	103,449	43,629	69,825	184,777	0	0	518,198
Radionuclide	**(pCi/g)**											
Americium-241	.06(p)	37	7	19	176,352	156,572	66,033	105,682	279,662	0	0	784,300
Beryllium-7	0(n)	18	0	0	0	0	0	0	0	0	0	0
Carbon-14	0(n)	27	14	52	483,334	429,122	180,979	289,646	766,481	0	0	2,149,563
Cesium-134	.0388(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cesium-137	3.517(n)	35	11	31	292,960	260,101	109,696	175,561	464,581	0	0	1,302,898
Chromium-51	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt-58	0(n)	20	0	0	0	0	0	0	0	0	0	0
Cobalt-60	.0147(n)	33	14	42	395,455	351,100	148,074	236,983	627,121	0	0	1,758,733
Europium-152	.04(p)	21	17	81	754,593	669,956	282,549	452,203	1,196,649	0	0	3,355,950
Europium-154	.1151(n)	18	9	50	466,072	413,796	174,516	279,302	739,107	0	0	2,072,793
Europium-155	.0781(n)	0	0	0	0	0	0	0	0	0	0	0
Gross Alpha	8.4(o)	30	8	27	248,572	220,691	93,075	148,961	394,190	0	0	1,105,489
Gross Beta	16(o)	30	28	93	870,002	772,420	325,763	521,363	1,379,666	0	0	3,869,213
Plutonium-238	0.0045(n)	7	0	0	0	0	0	0	0	0	0	0
Plutonium-239/240	.0203(n)	37	13	35	327,510	290,776	122,633	196,266	519,372	0	0	1,456,557
Potassium-40	18.48(n)	30	0	0	0	0	0	0	0	0	0	0

Reference Sites: 116-C-5, 116-D-7, 116-DR-9

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Radium-226	1.037(n)	36	9	25	233,036	206,898	87,258	139,651	369,553	0	0	1,036,396
Sodium-22	0(n)	3	3	100	932,145	827,593	349,031	558,604	1,478,213	0	0	4,145,586
Strontium-90	0.3135(n)	39	27	69	645,331	572,949	241,637	386,726	1,023,378	0	0	2,870,021
Technetium-99	0(n)	20	7	35	326,251	289,657	122,161	195,511	517,375	0	0	1,450,955
Thorium-228	2.5(o)	38	1	3	24,530	21,779	9,185	14,700	38,900	0	0	109,094
Thorium-232	1.308(n)	11	0	0	0	0	0	0	0	0	0	0
Uranium-233/234	1.366(n)	18	0	0	0	0	0	0	0	0	0	0
Uranium-235	.0507(n)	39	3	8	71,703	63,661	26,849	42,970	113,709	0	0	318,891
Uranium-238	1.388(n)	39	0	0	0	0	0	0	0	0	0	0
Total Radioactive Waste (may include mixed waste)					932,145	827,593	349,031	558,604	1,478,213	0	0	4,145,586

Summary

Total TSCA Mixed Waste	0	0	0	0	0	0	0	0
Total Non-TSCA Mixed Waste	116,518	103,449	43,629	69,825	184,777	0	0	518,198
Total Mixed Waste	116,518	103,449	43,629	69,825	184,777	0	0	518,198
Total Non-Radioactive TSCA Hazardous Waste	0	0	0	0	0	0	0	0
Total Non-Radioactive Hazardous Waste (Non-TSCA)	0	0	0	0	0	0	0	0
Total Hazardous Waste (Non-Radioactive)	0	0	0	0	0	0	0	0
Total Radioactive Waste (Non-Hazardous)	815,627	724,144	305,403	488,778	1,293,437	0	0	3,627,387

Reference Sites: 116-D-3, 116-D-6

Sub-Project	100-BC	100-DR	100-FR	100-HR	100-KR	100-NR	300-FF	TOTAL
Contaminated Volume (yd3)	30	51	76	0	0	0	105	262

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Inorganic	**(mg/kg)**											
Aluminum	230000(a)	6	0	0	0	0	0	0	0	0	0	0
Antimony	31(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Arsenic	8.92(b)	6	0	0	0	0	0	0	0	0	0	0
Barium	5500(a)	6	0	0	0	0	0	0	0	0	0	0
Beryllium	1.77(b)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cadmium	2(c)	6	0	0	0	0	0	0	0	0	0	0
Chromium	100(c)	6	0	0	0	0	0	0	0	0	0	0
Cobalt	(d)	6	0	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Copper	2900(a)	6	0	0	0	0	0	0	0	0	0	0
Iron	(d)	6	0	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Lead	250(c)	6	0	0	0	0	0	0	0	0	0	0
Magnesium	(d)	6	0	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Manganese	10,900(e)	6	0	0	0	0	0	0	0	0	0	0
Mercury	1.25(b)	6	0	0	0	0	0	0	0	0	0	0
Nickel	1600(a)	6	0	0	0	0	0	0	0	0	0	0
Potassium	(d)	6	0	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Selenium	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Silver	390(a)	6	0	0	0	0	0	0	0	0	0	0
Sodium	(d)	6	0	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Sulfate	(d)	(d)	(d)	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Thallium	5.5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Sites: 116-D-3, 116-D-6

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Vanadium	550(a)	6	0	0	0	0	0	0	0	0	0	0
Zinc	23000(a)	6	0	0	0	0	0	0	0	0	0	0
Organic	**(mg/kg)**											
Acetone	7800(a)	6	0	0	0	0	0	0	0	0	0	0
Benzene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Butanone	47000(a)	6	0	0	0	0	0	0	0	0	0	0
Carbondisulfide	7800(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,2-Dichloroethene (total)	700(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Methyl-2-Pentanone	3900(a)	6	0	0	0	0	0	0	0	0	0	0
Methylene Chloride	.5(c)	6	0	0	0	0	0	0	0	0	0	0
Tetrachloroethene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Toluene	40(c)	6	0	0	0	0	0	0	0	0	0	0
Trichloroethene	.5(c)	6	0	0	0	0	0	0	0	0	0	0
Vinyl Chloride	0.63(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Acenaphthene	4700(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Anthracene	23000(a)	6	0	0	0	0	0	0	0	0	0	0
Benzo(a)anthracene	1.6(a)	6	0	0	0	0	0	0	0	0	0	0
Benzo(a)pyrene	0.16(a)	6	0	0	0	0	0	0	0	0	0	0
Benzo(b)fluoranthene	1.6(a)	6	0	0	0	0	0	0	0	0	0	0
Benzo(ghi)perylene	2300(f)	6	0	0	0	0	0	0	0	0	0	0
Benzo(k)fluoranthene	1.6(g)	6	0	0	0	0	0	0	0	0	0	0
Benzoic Acid	310000(a)	6	0	0	0	0	0	0	0	0	0	0
Bis (2-ethylhexhl) phthalate	85(a)	6	0	0	0	0	0	0	0	0	0	0
Butylbenzylphthalate	16000(a)	6	0	0	0	0	0	0	0	0	0	0
Carbazole	60(a)	6	0	0	0	0	0	0	0	0	0	0
Carbon Tetracloride	9.2(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Chloro-3-Methylphenol	10(h)	6	0	0	0	0	0	0	0	0	0	0
2-Chlorophenol	390(a)	6	0	0	0	0	0	0	0	0	0	0

Reference Sites: 116-D-3, 116-D-6

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Chloroform	200(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Chloroaniline	310(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Chrysene	16(g)	6	0	0	0	0	0	0	0	0	0	0
Di-n-octyl-phthalate	1600(a)	6	0	0	0	0	0	0	0	0	0	0
Di-n-butyl-phthalate	7800(a)	6	0	0	0	0	0	0	0	0	0	0
Dibenzofuran	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,3 Dichlorobenzene	7000(a)	6	0	0	0	0	0	0	0	0	0	0
1,4 Dichlorobenzene	50(a)	6	0	0	0	0	0	0	0	0	0	0
Diethyl phthalate	63000(a)	6	0	0	0	0	0	0	0	0	0	0
Ethylbenzene	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Fluoranthene	3100(a)	6	0	0	0	0	0	0	0	0	0	0
Fluorene	3100(a)	6	0	0	0	0	0	0	0	0	0	0
Indeno(1,2,3-cd)pyrene	1.6(a)	6	0	0	0	0	0	0	0	0	0	0
2-Hexanone	3900(g)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Methylnaphthalene	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Methyphenol	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Naphthalene	3100(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Nitrophenol	4800(i)	6	0	0	0	0	0	0	0	0	0	0
N-Nitrosodiphenylamine	240(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Pentachlorophenol	10(a)	6	0	0	0	0	0	0	0	0	0	0
Phenathrene	2,300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
Phenol	47000(a)	6	0	0	0	0	0	0	0	0	0	0
1,1,1-Trichloroethane	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Pyrene	2300(a)	6	0	0	0	0	0	0	0	0	0	0
Xylenes	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
2,4-D	780(a)	2	0	0	0	0	0	0	0	0	0	0
4,4'DDD	5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDE	3.5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Sites: 116-D-3, 116-D-6

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Aldrin	0.07(a)	6	0	0	0	0	0	0	0	0	0	0
Aroclor-1248	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1254	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1260	0.16(a)	6	0	0	0	0	0	0	0	0	0	0
Beta-BHC - Lindane	0.92(a)	6	0	0	0	0	0	0	0	0	0	0
Dieldrin	0.075(a)	6	0	0	0	0	0	0	0	0	0	0
Endrin	23(a)	6	0	0	0	0	0	0	0	0	0	0
gamma-Chlordane	0.92(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Heptachlor	0.27(a)	6	0	0	0	0	0	0	0	0	0	0
Total TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Total Non-TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Radionuclide	**(pCi/g)**											
Americium-241	.06(p)	6	0	0	0	0	0	0	0	0	0	0
Beryllium-7	0(n)	4	0	0	0	0	0	0	0	0	0	0
Carbon-14	0(n)	6	6	100	30	51	76	0	0	0	105	262
Cesium-134	.0388(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cesium-137	3.517(n)	6	0	0	0	0	0	0	0	0	0	0
Chromium-51	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt-58	0(n)	6	0	0	0	0	0	0	0	0	0	0
Cobalt-60	.0147(n)	6	0	0	0	0	0	0	0	0	0	0
Europium-152	.04(p)	2	0	0	0	0	0	0	0	0	0	0
Europium-154	.1151(n)	2	0	0	0	0	0	0	0	0	0	0
Europium-155	.0781(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Gross Alpha	8.4(o)	6	1	17	5	9	13	0	0	0	18	44
Gross Beta	16(o)	6	6	100	30	51	76	0	0	0	105	262
Plutonium-238	0.0045(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Plutonium-239/240	.0203(n)	6	0	0	0	0	0	0	0	0	0	0
Potassium-40	18.48(n)	6	0	0	0	0	0	0	0	0	0	0

Reference Sites: 116-D-3, 116-D-6

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Radium-226	1.037(n)	6	0	0	0	0	0	0	0	0	0	0
Sodium-22	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Strontium-90	0.3135(n)	6	0	0	0	0	0	0	0	0	0	0
Technetium-99	0(n)	6	4	67	20	34	51	0	0	0	70	175
Thorium-228	2.5(o)	6	0	0	0	0	0	0	0	0	0	0
Thorium-232	1.308(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Uranium-233/234	1.366(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Uranium-235	.0507(n)	6	0	0	0	0	0	0	0	0	0	0
Uranium-238	1.388(n)	6	0	0	0	0	0	0	0	0	0	0
Total Radioactive Waste (may include mixed waste)					30	51	76	0	0	0	105	262
Summary												
Total TSCA Mixed Waste					0	0	0	0	0	0	0	0
Total Non-TSCA Mixed Waste					0	0	0	0	0	0	0	0
Total Mixed Waste					0	0	0	0	0	0	0	0
Total Non-Radioactive TSCA Hazardous Waste					0	0	0	0	0	0	0	0
Total Non-Radioactive Hazardous Waste (Non-TSCA)					0	0	0	0	0	0	0	0
Total Hazardous Waste (Non-Radioactive)					0	0	0	0	0	0	0	0
Total Radioactive Waste (Non-Hazardous)					30	51	76	0	0	0	105	262

Reference Site: 116-D-4

Sub-Project	100-BC	100-DR	100-FR	100-HR	100-KR	100-NR	300-FF	TOTAL
Contaminated Volume (yd3)	0	26	0	0	0	0	0	26

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Inorganic	**(mg/kg)**											
Aluminum	230000(a)	7	0	0	0	0	0	0	0	0	0	0
Antimony	31(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Arsenic	8.92(b)	7	0	0	0	0	0	0	0	0	0	0
Barium	5500(a)	7	0	0	0	0	0	0	0	0	0	0
Beryllium	1.77(b)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cadmium	2(c)	7	0	0	0	0	0	0	0	0	0	0
Chromium	100(c)	7	0	0	0	0	0	0	0	0	0	0
Cobalt	(d)	7	0	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Copper	2900(a)	7	0	0	0	0	0	0	0	0	0	0
Iron	(d)	7	0	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Lead	250(c)	7	0	0	0	0	0	0	0	0	0	0
Magnesium	(d)	7	0	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Manganese	10,900(e)	7	0	0	0	0	0	0	0	0	0	0
Mercury	1.25(b)	7	0	0	0	0	0	0	0	0	0	0
Nickel	1600(a)	7	0	0	0	0	0	0	0	0	0	0
Potassium	(d)	7	0	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Selenium	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Silver	390(a)	7	0	0	0	0	0	0	0	0	0	0
Sodium	(d)	7	0	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Sulfate	(d)	(l)	(l)	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Thallium	5.5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Site: 116-D-4

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Vanadium	550(a)	7	0	0	0	0	0	0	0	0	0	0
Zinc	23000(a)	7	0	0	0	0	0	0	0	0	0	0
Organic	**(mg/kg)**											
Acetone	7800(a)	7	0	0	0	0	0	0	0	0	0	0
Benzene	.5(c)	7	0	0	0	0	0	0	0	0	0	0
2-Butanone	47000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbondisulfide	7800(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,2-Dichloroethene (total)	700(a)	7	0	0	0	0	0	0	0	0	0	0
4-Methyl-2-Pentanone	3900(a)	7	0	0	0	0	0	0	0	0	0	0
Methylene Chloride	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Tetrachloroethene	.5(c)	7	0	0	0	0	0	0	0	0	0	0
Toluene	40(c)	7	0	0	0	0	0	0	0	0	0	0
Trichloroethene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Vinyl Chloride	0.63(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Acenaphthene	4700(a)	7	0	0	0	0	0	0	0	0	0	0
Anthracene	23000(a)	7	0	0	0	0	0	0	0	0	0	0
Benzo(a)anthracene	1.6(a)	7	0	0	0	0	0	0	0	0	0	0
Benzo(a)pyrene	0.16(a)	7	0	0	0	0	0	0	0	0	0	0
Benzo(b)fluoranthene	1.6(a)	7	0	0	0	0	0	0	0	0	0	0
Benzo(ghi)perylene	2300(f)	7	0	0	0	0	0	0	0	0	0	0
Benzo(k)fluoranthene	1.6(g)	7	0	0	0	0	0	0	0	0	0	0
Benzoic Acid	310000(a)	7	0	0	0	0	0	0	0	0	0	0
Bis (2-ethylhexhl) phthalate	85(a)	7	0	0	0	0	0	0	0	0	0	0
Butylbenzylphthalate	16000(a)	7	0	0	0	0	0	0	0	0	0	0
Carbazole	60(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbon Tetracloride	9.2(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Chloro-3-Methylphenol	10(h)	7	0	0	0	0	0	0	0	0	0	0
2-Chlorophenol	390(a)	7	0	0	0	0	0	0	0	0	0	0

Reference Site: 116-D-4

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Chloroform	200(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Chloroaniline	310(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Chrysene	16(g)	7	0	0	0	0	0	0	0	0	0	0
Di-n-octyl-phthalate	1600(a)	7	0	0	0	0	0	0	0	0	0	0
Di-n-butyl-phthalate	7800(a)	7	0	0	0	0	0	0	0	0	0	0
Dibenzofuran	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,3 Dichlorobenzene	7000(a)	7	0	0	0	0	0	0	0	0	0	0
1,4 Dichlorobenzene	50(a)	7	0	0	0	0	0	0	0	0	0	0
Diethyl phthalate	63000(a)	7	0	0	0	0	0	0	0	0	0	0
Ethylbenzene	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Fluoranthene	3100(a)	7	0	0	0	0	0	0	0	0	0	0
Fluorene	3100(a)	7	0	0	0	0	0	0	0	0	0	0
Indeno(1,2,3-cd)pyrene	1.6(a)	7	0	0	0	0	0	0	0	0	0	0
2-Hexanone	3900(g)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Methylnaphthalene	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Methyphenol	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Naphthalene	3100(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Nitrophenol	4800(i)	7	0	0	0	0	0	0	0	0	0	0
N-Nitrosodiphenylamine	240(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Pentachlorophenol	10(a)	7	0	0	0	0	0	0	0	0	0	0
Phenathrene	2,300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
Phenol	47000(a)	7	0	0	0	0	0	0	0	0	0	0
1,1,1-Trichloroethane	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Pyrene	2300(a)	7	0	0	0	0	0	0	0	0	0	0
Xylenes	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
2,4-D	780(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDD	5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDE	3.5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Site: 116-D-4

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Aldrin	0.07(a)	7	0	0	0	0	0	0	0	0	0	0
Aroclor-1248	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1254	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1260	0.16(a)	7	0	0	0	0	0	0	0	0	0	0
Beta-BHC - Lindane	0.92(a)	7	0	0	0	0	0	0	0	0	0	0
Dieldrin	0.075(a)	7	0	0	0	0	0	0	0	0	0	0
Endrin	23(a)	7	0	0	0	0	0	0	0	0	0	0
gamma-Chlordane	0.92(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Heptachlor	0.27(a)	7	0	0	0	0	0	0	0	0	0	0
Total TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Total Non-TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Radionuclide	**(pCi/g)**											
Americium-241	.06(p)	3	0	0	0	0	0	0	0	0	0	0
Beryllium-7	0(n)	3	0	0	0	0	0	0	0	0	0	0
Carbon-14	0(n)	3	0	0	0	0	0	0	0	0	0	0
Cesium-134	.0388(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cesium-137	3.517(n)	3	0	0	0	0	0	0	0	0	0	0
Chromium-51	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt-58	0(n)	3	0	0	0	0	0	0	0	0	0	0
Cobalt-60	.0147(n)	3	0	0	0	0	0	0	0	0	0	0
Europium-152	.04(p)	(l)	0	0	0	0	0	0	0	0	0	0
Europium-154	.1151(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Europium-155	.0781(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Gross Alpha	8.4(o)	3	0	0	0	0	0	0	0	0	0	0
Gross Beta	16(o)	3	3	100	0	26	0	0	0	0	0	26
Plutonium-238	0.0045(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Plutonium-239/240	.0203(n)	3	0	0	0	0	0	0	0	0	0	0
Potassium-40	18.48(n)	3	0	0	0	0	0	0	0	0	0	0

Reference Site: 116-D-4

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Radium-226	1.037(n)	3	0	0	0	0	0	0	0	0	0	0
Sodium-22	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Strontium-90	0.3135(n)	3	1	33	0	9	0	0	0	0	0	9
Technetium-99	0(n)	3	0	0	0	0	0	0	0	0	0	0
Thorium-228	2.5(o)	3	0	0	0	0	0	0	0	0	0	0
Thorium-232	1.308(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Uranium-233/234	1.366(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Uranium-235	.0507(n)	3	0	0	0	0	0	0	0	0	0	0
Uranium-238	1.388(n)	3	0	0	0	0	0	0	0	0	0	0
Total Radioactive Waste (may include mixed waste)					0	26	0	0	0	0	0	26
Summary												
Total TSCA Mixed Waste					0	0	0	0	0	0	0	0
Total Non-TSCA Mixed Waste					0	0	0	0	0	0	0	0
Total Mixed Waste					0	0	0	0	0	0	0	0
Total Non-Radioactive TSCA Hazardous Waste					0	0	0	0	0	0	0	0
Total Non-Radioactive Hazardous Waste (Non-TSCA)					0	0	0	0	0	0	0	0
Total Hazardous Waste (Non-Radioactive)					0	0	0	0	0	0	0	0
Total Radioactive Waste (Non-Hazardous)					0	26	0	0	0	0	0	26

Reference Sites: 116-D-5, 116-DR-5

Sub-Project	100-BC	100-DR	100-FR	100-HR	100-KR	100-NR	300-FF	TOTAL
Contaminated Volume (yd3)	1,706	1,952	871	435	1,051	0	0	6,015

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Inorganic	**(mg/kg)**											
Aluminum	230000(a)	4	0	0	0	0	0	0	0	0	0	0
Antimony	31(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Arsenic	8.92(b)	4	0	0	0	0	0	0	0	0	0	0
Barium	5500(a)	4	0	0	0	0	0	0	0	0	0	0
Beryllium	1.77(b)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cadmium	2(c)	4	0	0	0	0	0	0	0	0	0	0
Chromium	100(c)	4	0	0	0	0	0	0	0	0	0	0
Cobalt	(d)	4	0	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Copper	2900(a)	4	0	0	0	0	0	0	0	0	0	0
Iron	(d)	4	0	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Lead	250(c)	4	0	0	0	0	0	0	0	0	0	0
Magnesium	(d)	4	0	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Manganese	10,900(e)	4	0	0	0	0	0	0	0	0	0	0
Mercury	1.25(b)	4	0	0	0	0	0	0	0	0	0	0
Nickel	1600(a)	4	0	0	0	0	0	0	0	0	0	0
Potassium	(d)	4	0	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Selenium	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Silver	390(a)	4	0	0	0	0	0	0	0	0	0	0
Sodium	(d)	4	0	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Sulfate	(d)	(l)	(l)	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Thallium	5.5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Sites: 116-D-5, 116-DR-5

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Vanadium	550(a)	4	0	0	0	0	0	0	0	0	0	0
Zinc	23000(a)	4	0	0	0	0	0	0	0	0	0	0
Organic	**(mg/kg)**											
Acetone	7800(a)	4	0	0	0	0	0	0	0	0	0	0
Benzene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Butanone	47000(a)	4	0	0	0	0	0	0	0	0	0	0
Carbondisulfide	7800(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,2-Dichloroethene (total)	700(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Methyl-2-Pentanone	3900(a)	4	0	0	0	0	0	0	0	0	0	0
Methylene Chloride	.5(c)	4	0	0	0	0	0	0	0	0	0	0
Tetrachloroethene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Toluene	40(c)	4	0	0	0	0	0	0	0	0	0	0
Trichloroethene	.5(c)	4	0	0	0	0	0	0	0	0	0	0
Vinyl Chloride	0.63(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Acenaphthene	4700(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Anthracene	23000(a)	4	0	0	0	0	0	0	0	0	0	0
Benzo(a)anthracene	1.6(a)	4	0	0	0	0	0	0	0	0	0	0
Benzo(a)pyrene	0.16(a)	4	0	0	0	0	0	0	0	0	0	0
Benzo(b)fluoranthene	1.6(a)	4	0	0	0	0	0	0	0	0	0	0
Benzo(ghi)perylene	2300(f)	4	0	0	0	0	0	0	0	0	0	0
Benzo(k)fluoranthene	1.6(g)	4	0	0	0	0	0	0	0	0	0	0
Benzoic Acid	310000(a)	4	0	0	0	0	0	0	0	0	0	0
Bis (2-ethylhexhl) phthalate	85(a)	4	0	0	0	0	0	0	0	0	0	0
Butylbenzylphthalate	16000(a)	4	0	0	0	0	0	0	0	0	0	0
Carbazole	60(a)	3	0	0	0	0	0	0	0	0	0	0
Carbon Tetracloride	9.2(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Chloro-3-Methylphenol	10(h)	4	0	0	0	0	0	0	0	0	0	0
2-Chlorophenol	390(a)	4	0	0	0	0	0	0	0	0	0	0

Reference Sites: 116-D-5, 116-DR-5

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Chloroform	200(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Chloroaniline	310(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Chrysene	16(g)	4	0	0	0	0	0	0	0	0	0	0
Di-n-octyl-phthalate	1600(a)	4	0	0	0	0	0	0	0	0	0	0
Di-n-butyl-phthalate	7800(a)	4	0	0	0	0	0	0	0	0	0	0
Dibenzofuran	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,3 Dichlorobenzene	7000(a)	4	0	0	0	0	0	0	0	0	0	0
1,4 Dichlorobenzene	50(a)	4	0	0	0	0	0	0	0	0	0	0
Diethyl phthalate	63000(a)	4	0	0	0	0	0	0	0	0	0	0
Ethylbenzene	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Fluoranthene	3100(a)	4	0	0	0	0	0	0	0	0	0	0
Fluorene	3100(a)	4	0	0	0	0	0	0	0	0	0	0
Indeno(1,2,3-cd)pyrene	1.6(a)	4	0	0	0	0	0	0	0	0	0	0
2-Hexanone	3900(g)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Methylnaphthalene	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Methyphenol	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Naphthalene	3100(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Nitrophenol	4800(i)	4	0	0	0	0	0	0	0	0	0	0
N-Nitrosodiphenylamine	240(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Pentachlorophenol	10(a)	4	0	0	0	0	0	0	0	0	0	0
Phenathrene	2,300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
Phenol	47000(a)	4	0	0	0	0	0	0	0	0	0	0
1,1,1-Trichloroethane	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Pyrene	2300(a)	4	0	0	0	0	0	0	0	0	0	0
Xylenes	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
2,4-D	780(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDD	5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDE	3.5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Sites: 116-D-5, 116-DR-5

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Aldrin	0.07(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1248	0.16(a)	4	0	0	0	0	0	0	0	0	0	0
Aroclor-1254	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1260	0.16(a)	4	0	0	0	0	0	0	0	0	0	0
Beta-BHC - Lindane	0.92(a)	4	0	0	0	0	0	0	0	0	0	0
Dieldrin	0.075(a)	4	0	0	0	0	0	0	0	0	0	0
Endrin	23(a)	4	0	0	0	0	0	0	0	0	0	0
gamma-Chlordane	0.92(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Heptachlor	0.27(a)	4	0	0	0	0	0	0	0	0	0	0
Total TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Total Non-TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Radionuclide	**(pCi/g)**											
Americium-241	.06(p)	4	0	0	0	0	0	0	0	0	0	0
Beryllium-7	0(n)	4	0	0	0	0	0	0	0	0	0	0
Carbon-14	0(n)	3	3	100	1,706	1,952	871	435	1,051	0	0	6,015
Cesium-134	.0388(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cesium-137	3.517(n)	4	0	0	0	0	0	0	0	0	0	0
Chromium-51	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt-58	0(n)	4	0	0	0	0	0	0	0	0	0	0
Cobalt-60	.0147(n)	4	1	25	427	488	218	109	263	0	0	1,504
Europium-152	.04(p)	1	0	0	0	0	0	0	0	0	0	0
Europium-154	.1151(n)	1	0	0	0	0	0	0	0	0	0	0
Europium-155	.0781(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Gross Alpha	8.4(o)	4	2	50	853	976	436	218	526	0	0	3,008
Gross Beta	16(o)	4	3	75	1,280	1,464	653	326	788	0	0	4,511
Plutonium-238	0.0045(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Plutonium-239/240	.0203(n)	4	0	0	0	0	0	0	0	0	0	0
Potassium-40	18.48(n)	4	0	0	0	0	0	0	0	0	0	0

Reference Sites: 116-D-5, 116-DR-5

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Radium-226	1.037(n)	4	0	0	0	0	0	0	0	0	0	0
Sodium-22	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Strontium-90	0.3135(n)	4	0	0	0	0	0	0	0	0	0	0
Technetium-99	0(n)	4	0	0	0	0	0	0	0	0	0	0
Thorium-228	2.5(o)	4	0	0	0	0	0	0	0	0	0	0
Thorium-232	1.308(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Uranium-233/234	1.366(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Uranium-235	.0507(n)	4	0	0	0	0	0	0	0	0	0	0
Uranium-238	1.388(n)	4	0	0	0	0	0	0	0	0	0	0
Total Radioactive Waste (may include mixed waste)					1,706	1,952	871	435	1,051	0	0	6,015
Summary												
Total TSCA Mixed Waste					0	0	0	0	0	0	0	0
Total Non-TSCA Mixed Waste					0	0	0	0	0	0	0	0
Total Mixed Waste					0	0	0	0	0	0	0	0
Total Non-Radioactive TSCA Hazardous Waste					0	0	0	0	0	0	0	0
Total Non-Radioactive Hazardous Waste (Non-TSCA)					0	0	0	0	0	0	0	0
Total Hazardous Waste (Non-Radioactive)					0	0	0	0	0	0	0	0
Total Radioactive Waste (Non-Hazardous)					1,706	1,952	871	435	1,051	0	0	6,015

Reference Sites: 116-D-9, 116-H-9

Sub-Project	100-BC	100-DR	100-FR	100-HR	100-KR	100-NR	300-FF	TOTAL
Contaminated Volume (yd3)	97	194	34	60	0	0	0	385

Constituent	Clean-up Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Inorganic	**(mg/kg)**											
Aluminum	230000(a)	4	0	0	0	0	0	0	0	0	0	0
Antimony	31(a)	7	0	0	0	0	0	0	0	0	0	0
Arsenic	8.92(b)	11	0	0	0	0	0	0	0	0	0	0
Barium	5500(a)	11	0	0	0	0	0	0	0	0	0	0
Beryllium	1.77(b)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cadmium	2(c)	11	0	0	0	0	0	0	0	0	0	0
Chromium	100(c)	11	4	36	35	71	12	22	0	0	0	140
Cobalt	(d)	4	0	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Copper	2900(a)	11	0	0	0	0	0	0	0	0	0	0
Iron	(d)	4	0	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Lead	250(c)	11	0	0	0	0	0	0	0	0	0	0
Magnesium	(d)	4	0	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Manganese	10,900(e)	4	0	0	0	0	0	0	0	0	0	0
Mercury	1.25(b)	11	0	0	0	0	0	0	0	0	0	0
Nickel	1600(a)	11	0	0	0	0	0	0	0	0	0	0
Potassium	(d)	4	0	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Selenium	390(a)	7	0	0	0	0	0	0	0	0	0	0
Silver	390(a)	11	0	0	0	0	0	0	0	0	0	0
Sodium	(d)	4	0	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Sulfate	(d)	(l)	(l)	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Thallium	5.5(a)	7	0	0	0	0	0	0	0	0	0	0

Reference Sites: 116-D-9, 116-H-9

Constituent	Clean-up Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Vanadium	550(a)	4	0	0	0	0	0	0	0	0	0	0
Zinc	23000(a)	11	0	0	0	0	0	0	0	0	0	0
Organic	**(mg/kg)**											
Acetone	7800(a)	11	0	0	0	0	0	0	0	0	0	0
Benzene	.5(c)	(I)	(I)	0	0	0	0	0	0	0	0	0
2-Butanone	47000(a)	4	0	0	0	0	0	0	0	0	0	0
Carbondisulfide	7800(a)	(I)	(I)	0	0	0	0	0	0	0	0	0
1,2-Dichloroethene (total)	700(a)	(I)	(I)	0	0	0	0	0	0	0	0	0
4-Methyl-2-Pentanone	3900(a)	4	0	0	0	0	0	0	0	0	0	0
Methylene Chloride	.5(c)	11	0	0	0	0	0	0	0	0	0	0
Tetrachloroethene	.5(c)	(I)	(I)	0	0	0	0	0	0	0	0	0
Toluene	40(c)	11	0	0	0	0	0	0	0	0	0	0
Trichloroethene	.5(c)	4	0	0	0	0	0	0	0	0	0	0
Vinyl Chloride	0.63(a)	(I)	(I)	0	0	0	0	0	0	0	0	0
Acenaphthene	4700(a)	7	0	0	0	0	0	0	0	0	0	0
Anthracene	23000(a)	11	0	0	0	0	0	0	0	0	0	0
Benzo(a)anthracene	1.6(a)	11	0	0	0	0	0	0	0	0	0	0
Benzo(a)pyrene	0.16(a)	11	0	0	0	0	0	0	0	0	0	0
Benzo(b)fluoranthene	1.6(a)	11	0	0	0	0	0	0	0	0	0	0
Benzo(ghi)perylene	2300(f)	11	0	0	0	0	0	0	0	0	0	0
Benzo(k)fluoranthene	1.6(g)	11	0	0	0	0	0	0	0	0	0	0
Benzoic Acid	310000(a)	4	0	0	0	0	0	0	0	0	0	0
Bis (2-ethylhexhl) phthalate	85(a)	11	0	0	0	0	0	0	0	0	0	0
Butylbenzylphthalate	16000(a)	11	0	0	0	0	0	0	0	0	0	0
Carbazole	60(a)	4	0	0	0	0	0	0	0	0	0	0
Carbon Tetracloride	9.2(a)	(I)	(I)	0	0	0	0	0	0	0	0	0
4-Chloro-3-Methylphenol	10(h)	4	0	0	0	0	0	0	0	0	0	0
2-Chlorophenol	390(a)	4	0	0	0	0	0	0	0	0	0	0

Reference Sites: 116-D-9, 116-H-9

Constituent	Clean-up Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Chloroform	200(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Chloroaniline	310(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Chrysene	16(g)	11	0	0	0	0	0	0	0	0	0	0
Di-n-octyl-phthalate	1600(a)	4	0	0	0	0	0	0	0	0	0	0
Di-n-butyl-phthalate	7800(a)	4	0	0	0	0	0	0	0	0	0	0
Dibenzofuran	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,3 Dichlorobenzene	7000(a)	4	0	0	0	0	0	0	0	0	0	0
1,4 Dichlorobenzene	50(a)	4	0	0	0	0	0	0	0	0	0	0
Diethyl phthalate	63000(a)	4	0	0	0	0	0	0	0	0	0	0
Ethylbenzene	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Fluoranthene	3100(a)	11	0	0	0	0	0	0	0	0	0	0
Fluorene	3100(a)	11	0	0	0	0	0	0	0	0	0	0
Indeno(1,2,3-cd)pyrene	1.6(a)	11	0	0	0	0	0	0	0	0	0	0
2-Hexanone	3900(g)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Methylnaphthalene	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Methyphenol	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Naphthalene	3100(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Nitrophenol	4800(i)	4	0	0	0	0	0	0	0	0	0	0
N-Nitrosodiphenylamine	240(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Pentachlorophenol	10(a)	4	0	0	0	0	0	0	0	0	0	0
Phenathrene	2,300(f)	7	0	0	0	0	0	0	0	0	0	0
Phenol	47000(a)	4	0	0	0	0	0	0	0	0	0	0
1,1,1-Trichloroethane	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Pyrene	2300(a)	11	0	0	0	0	0	0	0	0	0	0
Xylenes	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
2,4-D	780(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDD	5(a)	7	0	0	0	0	0	0	0	0	0	0
4,4'DDE	3.5(a)	7	0	0	0	0	0	0	0	0	0	0

Reference Sites: 116-D-9, 116-H-9

Constituent	Clean-up Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Aldrin	0.07(a)	4	0	0	0	0	0	0	0	0	0	0
Aroclor-1248	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1254	0.16(a)	7	0	0	0	0	0	0	0	0	0	0
Aroclor-1260	0.16(a)	11	0	0	0	0	0	0	0	0	0	0
Beta-BHC - Lindane	0.92(a)	4	0	0	0	0	0	0	0	0	0	0
Dieldrin	0.075(a)	4	0	0	0	0	0	0	0	0	0	0
Endrin	23(a)	4	0	0	0	0	0	0	0	0	0	0
gamma-Chlordane	0.92(a)	7	0	0	0	0	0	0	0	0	0	0
Heptachlor	0.27(a)	4	0	0	0	0	0	0	0	0	0	0
Total TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Total Non-TSCA Hazardous Waste (may include mixed waste)					35	71	12	22	0	0	0	140
Radionuclide	**(pCi/g)**											
Americium-241	.06(p)	11	0	0	0	0	0	0	0	0	0	0
Beryllium-7	0(n)	4	0	0	0	0	0	0	0	0	0	0
Carbon-14	0(n)	4	4	100	97	194	34	60	0	0	0	385
Cesium-134	.0388(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cesium-137	3.517(n)	11	0	0	0	0	0	0	0	0	0	0
Chromium-51	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt-58	0(n)	4	0	0	0	0	0	0	0	0	0	0
Cobalt-60	.0147(n)	11	0	0	0	0	0	0	0	0	0	0
Europium-152	.04(p)	7	2	29	28	55	10	17	0	0	0	110
Europium-154	.1151(n)	7	0	0	0	0	0	0	0	0	0	0
Europium-155	.0781(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Gross Alpha	8.4(o)	4	0	0	0	0	0	0	0	0	0	0
Gross Beta	16(o)	4	4	100	97	194	34	60	0	0	0	385
Plutonium-238	0.0045(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Plutonium-239/240	.0203(n)	11	0	0	0	0	0	0	0	0	0	0
Potassium-40	18.48(n)	4	0	0	0	0	0	0	0	0	0	0

Reference Sites: 116-D-9, 116-H-9

Constituent	Clean-up Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Radium-226	1.037(n)	11	0	0	0	0	0	0	0	0	0	0
Sodium-22	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Strontium-90	0.3135(n)	11	0	0	0	0	0	0	0	0	0	0
Technetium-99	0(n)	11	0	0	0	0	0	0	0	0	0	0
Thorium-228	2.5(o)	11	0	0	0	0	0	0	0	0	0	0
Thorium-232	1.308(n)	7	0	0	0	0	0	0	0	0	0	0
Uranium-233/234	1.366(n)	7	0	0	0	0	0	0	0	0	0	0
Uranium-235	.0507(n)	11	0	0	0	0	0	0	0	0	0	0
Uranium-238	1.388(n)	11	0	0	0	0	0	0	0	0	0	0
Total Radioactive Waste (may include mixed waste)					97	194	34	60	0	0	0	385

Summary

Total TSCA Mixed Waste	0	0	0	0	0	0	0	0
Total Non-TSCA Mixed Waste	35	71	12	22	0	0	0	140
Total Mixed Waste	35	71	12	22	0	0	0	140
Total Non-Radioactive TSCA Hazardous Waste	0	0	0	0	0	0	0	0
Total Non-Radioactive Hazardous Waste (Non-TSCA)	0	0	0	0	0	0	0	0
Total Hazardous Waste (Non-Radioactive)	0	0	0	0	0	0	0	0
Total Radioactive Waste (Non-Hazardous)	62	123	22	38	0	0	0	245

Reference Site: 116-H-2

Sub-Project	100-BC	100-DR	100-FR	100-HR	100-KR	100-NR	300-FF	TOTAL
Contaminated Volume (yd3)	0	427	7,389	9,436	0	0	0	17,252

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Inorganic	**(mg/kg)**											
Aluminum	230000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Antimony	31(a)	7	0	0	0	0	0	0	0	0	0	0
Arsenic	8.92(b)	7	0	0	0	0	0	0	0	0	0	0
Barium	5500(a)	7	0	0	0	0	0	0	0	0	0	0
Beryllium	1.77(b)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cadmium	2(c)	7	0	0	0	0	0	0	0	0	0	0
Chromium	100(c)	7	0	0	0	0	0	0	0	0	0	0
Cobalt	(d)	(l)	(l)	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Copper	2900(a)	7	0	0	0	0	0	0	0	0	0	0
Iron	(d)	(l)	(l)	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Lead	250(c)	7	0	0	0	0	0	0	0	0	0	0
Magnesium	(d)	(l)	(l)	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Manganese	10,900(e)	(l)	(l)	0	0	0	0	0	0	0	0	0
Mercury	1.25(b)	7	0	0	0	0	0	0	0	0	0	0
Nickel	1600(a)	7	0	0	0	0	0	0	0	0	0	0
Potassium	(d)	(l)	(l)	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Selenium	390(a)	7	0	0	0	0	0	0	0	0	0	0
Silver	390(a)	7	0	0	0	0	0	0	0	0	0	0
Sodium	(d)	(l)	(l)	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Sulfate	(d)	(l)	0	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Thallium	5.5(a)	7	0	0	0	0	0	0	0	0	0	0

Reference Site: 116-H-2

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Vanadium	550(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Zinc	23000(a)	7	0	0	0	0	0	0	0	0	0	0
Organic	**(mg/kg)**											
Acetone	7800(a)	7	0	0	0	0	0	0	0	0	0	0
Benzene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Butanone	47000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbondisulfide	7800(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,2-Dichloroethene (total)	700(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Methyl-2-Pentanone	3900(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Methylene Chloride	.5(c)	7	0	0	0	0	0	0	0	0	0	0
Tetrachloroethene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Toluene	40(c)	7	0	0	0	0	0	0	0	0	0	0
Trichloroethene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Vinyl Chloride	0.63(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Acenaphthene	4700(a)	7	0	0	0	0	0	0	0	0	0	0
Anthracene	23000(a)	7	0	0	0	0	0	0	0	0	0	0
Benzo(a)anthracene	1.6(a)	7	0	0	0	0	0	0	0	0	0	0
Benzo(a)pyrene	0.16(a)	7	0	0	0	0	0	0	0	0	0	0
Benzo(b)fluoranthene	1.6(a)	7	0	0	0	0	0	0	0	0	0	0
Benzo(ghi)perylene	2300(f)	7	0	0	0	0	0	0	0	0	0	0
Benzo(k)fluoranthene	1.6(g)	7	0	0	0	0	0	0	0	0	0	0
Benzoic Acid	310000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Bis (2-ethylhexhl) phthalate	85(a)	7	0	0	0	0	0	0	0	0	0	0
Butylbenzylphthalate	16000(a)	7	0	0	0	0	0	0	0	0	0	0
Carbazole	60(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbon Tetracloride	9.2(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Chloro-3-Methylphenol	10(h)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Chlorophenol	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Site: 116-H-2

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Chloroform	200(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Chloroaniline	310(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Chrysene	16(g)	7	0	0	0	0	0	0	0	0	0	0
Di-n-octyl-phthalate	1600(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Di-n-butyl-phthalate	7800(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Dibenzofuran	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,3 Dichlorobenzene	7000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,4 Dichlorobenzene	50(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Diethyl phthalate	63000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Ethylbenzene	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Fluoranthene	3100(a)	7	0	0	0	0	0	0	0	0	0	0
Fluorene	3100(a)	7	0	0	0	0	0	0	0	0	0	0
Indeno(1,2,3-cd)pyrene	1.6(a)	7	0	0	0	0	0	0	0	0	0	0
2-Hexanone	3900(g)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Methylnaphthalene	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Methyphenol	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Naphthalene	3100(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Nitrophenol	4800(i)	(l)	(l)	0	0	0	0	0	0	0	0	0
N-Nitrosodiphenylamine	240(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Pentachlorophenol	10(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Phenathrene	2,300(f)	7	0	0	0	0	0	0	0	0	0	0
Phenol	47000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,1,1-Trichloroethane	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Pyrene	2300(a)	7	0	0	0	0	0	0	0	0	0	0
Xylenes	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
2,4-D	780(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDD	5(a)	7	0	0	0	0	0	0	0	0	0	0
4,4'DDE	3.5(a)	7	0	0	0	0	0	0	0	0	0	0

Reference Site: 116-H-2

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Aldrin	0.07(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1248	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1254	0.16(a)	7	0	0	0	0	0	0	0	0	0	0
Aroclor-1260	0.16(a)	7	0	0	0	0	0	0	0	0	0	0
Beta-BHC - Lindane	0.92(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Dieldrin	0.075(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Endrin	23(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
gamma-Chlordane	0.92(a)	7	0	0	0	0	0	0	0	0	0	0
Heptachlor	0.27(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Total TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Total Non-TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Radionuclide	**(pCi/g)**											
Americium-241	.06(p)	7	0	0	0	0	0	0	0	0	0	0
Beryllium-7	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbon-14	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cesium-134	.0388(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cesium-137	3.517(n)	7	0	0	0	0	0	0	0	0	0	0
Chromium-51	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt-58	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt-60	.0147(n)	7	0	0	0	0	0	0	0	0	0	0
Europium-152	.04(p)	7	0	0	0	0	0	0	0	0	0	0
Europium-154	.1151(n)	7	0	0	0	0	0	0	0	0	0	0
Europium-155	.0781(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Gross Alpha	8.4(o)	(l)	(l)	0	0	0	0	0	0	0	0	0
Gross Beta	16(o)	(l)	(l)	0	0	0	0	0	0	0	0	0
Plutonium-238	0.0045(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Plutonium-239/240	.0203(n)	7	0	0	0	0	0	0	0	0	0	0
Potassium-40	18.48(n)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Site: 116-H-2

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Radium-226	1.037(n)	7	0	0	0	0	0	0	0	0	0	0
Sodium-22	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Strontium-90	0.3135(n)	7	0	0	0	0	0	0	0	0	0	0
Technetium-99	0(n)	7	0	0	0	0	0	0	0	0	0	0
Thorium-228	2.5(o)	7	0	0	0	0	0	0	0	0	0	0
Thorium-232	1.308(n)	7	0	0	0	0	0	0	0	0	0	0
Uranium-233/234	1.366(n)	7	0	0	0	0	0	0	0	0	0	0
Uranium-235	.0507(n)	7	0	0	0	0	0	0	0	0	0	0
Uranium-238	1.388(n)	7	0	0	0	0	0	0	0	0	0	0
Total Radioactive Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Summary												
Total TSCA Mixed Waste					0	0	0	0	0	0	0	0
Total Non-TSCA Mixed Waste					0	0	0	0	0	0	0	0
Total Mixed Waste					0	0	0	0	0	0	0	0
Total Non-Radioactive TSCA Hazardous Waste					0	0	0	0	0	0	0	0
Total Non-Radioactive Hazardous Waste (Non-TSCA)					0	0	0	0	0	0	0	0
Total Hazardous Waste (Non-Radioactive)					0	0	0	0	0	0	0	0
Total Radioactive Waste (Non-Hazardous)					0	0	0	0	0	0	0	0

Reference Site: 116-H-3

Sub-Project	100-BC	100-DR	100-FR	100-HR	100-KR	100-NR	300-FF	TOTAL
Contaminated Volume (yd3)	34	0	31	170	0	0	0	235

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Inorganic	**(mg/kg)**											
Aluminum	230000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Antimony	31(a)	4	0	0	0	0	0	0	0	0	0	0
Arsenic	8.92(b)	4	0	0	0	0	0	0	0	0	0	0
Barium	5500(a)	4	0	0	0	0	0	0	0	0	0	0
Beryllium	1.77(b)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cadmium	2(c)	4	0	0	0	0	0	0	0	0	0	0
Chromium	100(c)	4	0	0	0	0	0	0	0	0	0	0
Cobalt	(d)	(l)	(l)	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Copper	2900(a)	4	0	0	0	0	0	0	0	0	0	0
Iron	(d)	(l)	(l)	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Lead	250(c)	4	0	0	0	0	0	0	0	0	0	0
Magnesium	(d)	(l)	(l)	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Manganese	10,900(e)	(l)	(l)	0	0	0	0	0	0	0	0	0
Mercury	1.25(b)	4	0	0	0	0	0	0	0	0	0	0
Nickel	1600(a)	4	0	0	0	0	0	0	0	0	0	0
Potassium	(d)	(l)	(l)	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Selenium	390(a)	4	0	0	0	0	0	0	0	0	0	0
Silver	390(a)	4	0	0	0	0	0	0	0	0	0	0
Sodium	(d)	(l)	(l)	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Sulfate	(d)	(l)	(l)	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Thallium	5.5(a)	4	0	0	0	0	0	0	0	0	0	0

Reference Site: 116-H-3

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Vanadium	550(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Zinc	23000(a)	4	0	0	0	0	0	0	0	0	0	0
Organic	**(mg/kg)**											
Acetone	7800(a)	4	0	0	0	0	0	0	0	0	0	0
Benzene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Butanone	47000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbondisulfide	7800(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,2-Dichloroethene (total)	700(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Methyl-2-Pentanone	3900(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Methylene Chloride	.5(c)	4	0	0	0	0	0	0	0	0	0	0
Tetrachloroethene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Toluene	40(c)	4	0	0	0	0	0	0	0	0	0	0
Trichloroethene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Vinyl Chloride	0.63(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Acenaphthene	4700(a)	4	0	0	0	0	0	0	0	0	0	0
Anthracene	23000(a)	4	0	0	0	0	0	0	0	0	0	0
Benzo(a)anthracene	1.6(a)	4	0	0	0	0	0	0	0	0	0	0
Benzo(a)pyrene	0.16(a)	4	0	0	0	0	0	0	0	0	0	0
Benzo(b)fluoranthene	1.6(a)	4	0	0	0	0	0	0	0	0	0	0
Benzo(ghi)perylene	2300(f)	4	0	0	0	0	0	0	0	0	0	0
Benzo(k)fluoranthene	1.6(g)	4	0	0	0	0	0	0	0	0	0	0
Benzoic Acid	310000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Bis (2-ethylhexhl) phthalate	85(a)	4	0	0	0	0	0	0	0	0	0	0
Butylbenzylphthalate	16000(a)	4	0	0	0	0	0	0	0	0	0	0
Carbazole	60(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbon Tetracloride	9.2(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Chloro-3-Methylphenol	10(h)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Chlorophenol	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Site: 116-H-3

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Chloroform	200(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Chloroaniline	310(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Chrysene	16(g)	4	0	0	0	0	0	0	0	0	0	0
Di-n-octyl-phthalate	1600(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Di-n-butyl-phthalate	7800(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Dibenzofuran	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,3 Dichlorobenzene	7000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,4 Dichlorobenzene	50(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Diethyl phthalate	63000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Ethylbenzene	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Fluoranthene	3100(a)	4	0	0	0	0	0	0	0	0	0	0
Fluorene	3100(a)	4	0	0	0	0	0	0	0	0	0	0
Indeno(1,2,3-cd)pyrene	1.6(a)	4	0	0	0	0	0	0	0	0	0	0
2-Hexanone	3900(g)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Methylnaphthalene	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Methyphenol	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Naphthalene	3100(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Nitrophenol	4800(i)	(l)	(l)	0	0	0	0	0	0	0	0	0
N-Nitrosodiphenylamine	240(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Pentachlorophenol	10(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Phenathrene	2,300(f)	4	0	0	0	0	0	0	0	0	0	0
Phenol	47000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,1,1-Trichloroethane	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Pyrene	2300(a)	4	0	0	0	0	0	0	0	0	0	0
Xylenes	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
2,4-D	780(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDD	5(a)	4	0	0	0	0	0	0	0	0	0	0
4,4'DDE	3.5(a)	4	0	0	0	0	0	0	0	0	0	0

Reference Site: 116-H-3

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Aldrin	0.07(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1248	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1254	0.16(a)	4	0	0	0	0	0	0	0	0	0	0
Aroclor-1260	0.16(a)	4	0	0	0	0	0	0	0	0	0	0
Beta-BHC - Lindane	0.92(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Dieldrin	0.075(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Endrin	23(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
gamma-Chlordane	0.92(a)	4	0	0	0	0	0	0	0	0	0	0
Heptachlor	0.27(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Total TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Total Non-TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Radionuclide	**(pCi/g)**											
Americium-241	.06(p)	4	0	0	0	0	0	0	0	0	0	0
Beryllium-7	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbon-14	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cesium-134	.0388(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cesium-137	3.517(n)	4	0	0	0	0	0	0	0	0	0	0
Chromium-51	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt-58	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt-60	.0147(n)	4	4	100	34	0	31	170	0	0	0	235
Europium-152	.04(p)	4	2	50	17	0	16	85	0	0	0	118
Europium-154	.1151(n)	4	0	0	0	0	0	0	0	0	0	0
Europium-155	.0781(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Gross Alpha	8.4(o)	(l)	(l)	0	0	0	0	0	0	0	0	0
Gross Beta	16(o)	(l)	(l)	0	0	0	0	0	0	0	0	0
Plutonium-238	0.0045(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Plutonium-239/240	.0203(n)	4	0	0	0	0	0	0	0	0	0	0
Potassium-40	18.48(n)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Site: 116-H-3

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Radium-226	1.037(n)	4	0	0	0	0	0	0	0	0	0	0
Sodium-22	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Strontium-90	0.3135(n)	4	0	0	0	0	0	0	0	0	0	0
Technetium-99	0(n)	4	0	0	0	0	0	0	0	0	0	0
Thorium-228	2.5(o)	4	0	0	0	0	0	0	0	0	0	0
Thorium-232	1.308(n)	4	0	0	0	0	0	0	0	0	0	0
Uranium-233/234	1.366(n)	4	0	0	0	0	0	0	0	0	0	0
Uranium-235	.0507(n)	4	0	0	0	0	0	0	0	0	0	0
Uranium-238	1.388(n)	4	0	0	0	0	0	0	0	0	0	0
Total Radioactive Waste (may include mixed waste)					34	0	31	170	0	0	0	235
Summary												
Total TSCA Mixed Waste					0	0	0	0	0	0	0	0
Total Non-TSCA Mixed Waste					0	0	0	0	0	0	0	0
Total Mixed Waste					0	0	0	0	0	0	0	0
Total Non-Radioactive TSCA Hazardous Waste					0	0	0	0	0	0	0	0
Total Non-Radioactive Hazardous Waste (Non-TSCA)					0	0	0	0	0	0	0	0
Total Hazardous Waste (Non-Radioactive)					0	0	0	0	0	0	0	0
Total Radioactive Waste (Non-Hazardous)					34	0	31	170	0	0	0	235

Reference Sites: 116-N-1

Sub-Project	100-BC	100-DR	100-FR	100-HR	100-KR	100-NR	300-FF	TOTAL
Contaminated Volume (yd3)	0	0	0	0	0	92,502	0	92,502

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Inorganic	**(mg/kg)**											
Aluminum	230000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Antimony	31(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Arsenic	8.92(b)	(l)	(l)	0	0	0	0	0	0	0	0	0
Barium	5500(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Beryllium	1.77(b)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cadmium	2(c)	3	0	0	0	0	0	0	0	0	0	0
Chromium	100(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Copper	2900(a)	3	0	0	0	0	0	0	0	0	0	0
Iron	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Lead	250(c)	3	0	0	0	0	0	0	0	0	0	0
Magnesium	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Manganese	10,900(e)	3	0	0	0	0	0	0	0	0	0	0
Mercury	1.25(b)	(l)	(l)	0	0	0	0	0	0	0	0	0
Nickel	1600(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Potassium	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Selenium	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Silver	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Sodium	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Sulfate	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Thallium	5.5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Sites: 116-N-1

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Vanadium	550(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Zinc	23000(a)	3	0	0	0	0	0	0	0	0	0	0
Organic	**(mg/kg)**											
Acetone	7800(a)	3	0	0	0	0	0	0	0	0	0	0
Benzene	.5(c)	3	0	0	0	0	0	0	0	0	0	0
2-Butanone	47000(a)	3	0	0	0	0	0	0	0	0	0	0
Carbondisulfide	7800(a)	3	0	0	0	0	0	0	0	0	0	0
1,2-Dichloroethene (total)	700(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Methyl-2-Pentanone	3900(a)	3	0	0	0	0	0	0	0	0	0	0
Methylene Chloride	.5(c)	3	0	0	0	0	0	0	0	0	0	0
Tetrachloroethene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Toluene	40(c)	3	0	0	0	0	0	0	0	0	0	0
Trichloroethene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Vinyl Chloride	0.63(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Acenaphthene	4700(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Anthracene	23000(a)	3	0	0	0	0	0	0	0	0	0	0
Benzo(a)anthracene	1.6(a)	3	0	0	0	0	0	0	0	0	0	0
Benzo(a)pyrene	0.16(a)	3	0	0	0	0	0	0	0	0	0	0
Benzo(b)fluoranthene	1.6(a)	3	0	0	0	0	0	0	0	0	0	0
Benzo(ghi)perylene	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
Benzo(k)fluoranthene	1.6(g)	(l)	(l)	0	0	0	0	0	0	0	0	0
Benzoic Acid	310000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Bis (2-ethylhexhl) phthalate	85(a)	3	0	0	0	0	0	0	0	0	0	0
Butylbenzylphthalate	16000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbazole	60(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbon Tetracloride	9.2(a)	3	0	0	0	0	0	0	0	0	0	0
4-Chloro-3-Methylphenol	10(h)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Chlorophenol	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Sites: 116-N-1

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Chloroform	200(a)	3	0	0	0	0	0	0	0	0	0	0
4-Chloroaniline	310(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Chrysene	16(g)	3	0	0	0	0	0	0	0	0	0	0
Di-n-octyl-phthalate	1600(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Di-n-butyl-phthalate	7800(a)	3	0	0	0	0	0	0	0	0	0	0
Dibenzofuran	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,3 Dichlorobenzene	7000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,4 Dichlorobenzene	50(a)	3	0	0	0	0	0	0	0	0	0	0
Diethyl phthalate	63000(a)	3	0	0	0	0	0	0	0	0	0	0
Ethylbenzene	20(c)	3	0	0	0	0	0	0	0	0	0	0
Fluoranthene	3100(a)	3	0	0	0	0	0	0	0	0	0	0
Fluorene	3100(a)	3	0	0	0	0	0	0	0	0	0	0
Indeno(1,2,3-cd)pyrene	1.6(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Hexanone	3900(g)	3	0	0	0	0	0	0	0	0	0	0
2-Methylnaphthalene	2300(f)	3	0	0	0	0	0	0	0	0	0	0
4-Methyphenol	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Naphthalene	3100(a)	3	0	0	0	0	0	0	0	0	0	0
2-Nitrophenol	4800(i)	(l)	(l)	0	0	0	0	0	0	0	0	0
N-Nitrosodiphenylamine	240(a)	3	0	0	0	0	0	0	0	0	0	0
Pentachlorophenol	10(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Phenathrene	2,300(f)	3	0	0	0	0	0	0	0	0	0	0
Phenol	47000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,1,1-Trichloroethane	20(c)	3	0	0	0	0	0	0	0	0	0	0
Pyrene	2300(a)	3	0	0	0	0	0	0	0	0	0	0
Xylenes	20(c)	3	0	0	0	0	0	0	0	0	0	0
2,4-D	780(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDD	5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDE	3.5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Sites: 116-N-1

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Aldrin	0.07(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1248	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1254	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1260	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Beta-BHC - Lindane	0.92(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Dieldrin	0.075(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Endrin	23(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
gamma-Chlordane	0.92(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Heptachlor	0.27(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Total TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Total Non-TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Radionuclide	**(pCi/g)**											
Americium-241	.06(p)	3	0	0	0	0	0	0	0	0	0	0
Beryllium-7	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbon-14	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cesium-134	.0388(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cesium-137	3.517(n)	3	0	0	0	0	0	0	0	0	0	0
Chromium-51	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt-58	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt-60	.0147(n)	3	1	33	0	0	0	0	0	30,834	0	30,834
Europium-152	.04(p)	(l)	(l)	0	0	0	0	0	0	0	0	0
Europium-154	.1151(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Europium-155	.0781(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Gross Alpha	8.4(o)	3	0	0	0	0	0	0	0	0	0	0
Gross Beta	16(o)	3	3	100	0	0	0	0	0	92,502	0	92,502
Plutonium-238	0.0045(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Plutonium-239/240	.0203(n)	3	0	0	0	0	0	0	0	0	0	0
Potassium-40	18.48(n)	3	0	0	0	0	0	0	0	0	0	0

Reference Sites: 116-N-1

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Radium-226	1.037(n)	3	0	0	0	0	0	0	0	0	0	0
Sodium-22	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Strontium-90	0.3135(n)	3	1	33	0	0	0	0	0	30,834	0	30,834
Technetium-99	0(n)	3	2	67	0	0	0	0	0	61,668	0	61,668
Thorium-228	2.5(o)	3	0	0	0	0	0	0	0	0	0	0
Thorium-232	1.308(n)	3	0	0	0	0	0	0	0	0	0	0
Uranium-233/234	1.366(n)	1	0	0	0	0	0	0	0	0	0	0
Uranium-235	.0507(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Uranium-238	1.388(n)	3	0	0	0	0	0	0	0	0	0	0
Total Radioactive Waste (may include mixed waste)					0	0	0	0	0	92,502	0	92,502
Summary												
Total TSCA Mixed Waste					0	0	0	0	0	0	0	0
Total Non-TSCA Mixed Waste					0	0	0	0	0	0	0	0
Total Mixed Waste					0	0	0	0	0	0	0	0
Total Non-Radioactive TSCA Hazardous Waste					0	0	0	0	0	0	0	0
Total Non-Radioactive Hazardous Waste (Non-TSCA)					0	0	0	0	0	0	0	0
Total Hazardous Waste (Non-Radioactive)					0	0	0	0	0	0	0	0
Total Radioactive Waste (Non-Hazardous)					0	0	0	0	0	92,502	0	92,502

Reference Site: 116-N-2

Sub-Project	100-BC	100-DR	100-FR	100-HR	100-KR	100-NR	300-FF	TOTAL
Contaminated Volume (yd3)	0	0	0	0	0	421	0	421

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Inorganic	**(mg/kg)**											
Aluminum	230000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Antimony	31(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Arsenic	8.92(b)	(l)	(l)	0	0	0	0	0	0	0	0	0
Barium	5500(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Beryllium	1.77(b)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cadmium	2(c)	3	0	0	0	0	0	0	0	0	0	0
Chromium	100(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Copper	2900(a)	3	0	0	0	0	0	0	0	0	0	0
Iron	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Lead	250(c)	3	0	0	0	0	0	0	0	0	0	0
Magnesium	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Manganese	10,900(e)	3	0	0	0	0	0	0	0	0	0	0
Mercury	1.25(b)	(l)	(l)	0	0	0	0	0	0	0	0	0
Nickel	1600(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Potassium	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Selenium	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Silver	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Sodium	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Sulfate	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Thallium	5.5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Site: 116-N-2

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Vanadium	550(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
Zinc	23000(a)	3	0	0	0	0	0	0	0	0	0	0
Organic	**(mg/kg)**											
Acetone	7800(a)	3	0	0	0	0	0	0	0	0	0	0
Benzene	.5(c)	3	0	0	0	0	0	0	0	0	0	0
2-Butanone	47000(a)	3	0	0	0	0	0	0	0	0	0	0
Carbondisulfide	7800(a)	3	0	0	0	0	0	0	0	0	0	0
1,2-Dichloroethene (total)	700(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
4-Methyl-2-Pentanone	3900(a)	3	0	0	0	0	0	0	0	0	0	0
Methylene Chloride	.5(c)	3	0	0	0	0	0	0	0	0	0	0
Tetrachloroethene	.5(c)	(1)	(1)	0	0	0	0	0	0	0	0	0
Toluene	40(c)	3	0	0	0	0	0	0	0	0	0	0
Trichloroethene	.5(c)	(1)	(1)	0	0	0	0	0	0	0	0	0
Vinyl Chloride	0.63(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
Acenaphthene	4700(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
Anthracene	23000(a)	3	0	0	0	0	0	0	0	0	0	0
Benzo(a)anthracene	1.6(a)	3	0	0	0	0	0	0	0	0	0	0
Benzo(a)pyrene	0.16(a)	3	0	0	0	0	0	0	0	0	0	0
Benzo(b)fluoranthene	1.6(a)	3	0	0	0	0	0	0	0	0	0	0
Benzo(ghi)perylene	2300(f)	(1)	(1)	0	0	0	0	0	0	0	0	0
Benzo(k)fluoranthene	1.6(g)	(1)	(1)	0	0	0	0	0	0	0	0	0
Benzoic Acid	310000(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
Bis (2-ethylhexhl) phthalate	85(a)	3	0	0	0	0	0	0	0	0	0	0
Butylbenzylphthalate	16000(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
Carbazole	60(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
Carbon Tetracloride	9.2(a)	3	0	0	0	0	0	0	0	0	0	0
4-Chloro-3-Methylphenol	10(h)	(1)	(1)	0	0	0	0	0	0	0	0	0
2-Chlorophenol	390(a)	(1)	(1)	0	0	0	0	0	0	0	0	0

Reference Site: 116-N-2

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Chloroform	200(a)	3	0	0	0	0	0	0	0	0	0	0
4-Chloroaniline	310(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Chrysene	16(g)	3	0	0	0	0	0	0	0	0	0	0
Di-n-octyl-phthalate	1600(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Di-n-butyl-phthalate	7800(a)	3	0	0	0	0	0	0	0	0	0	0
Dibenzofuran	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,3 Dichlorobenzene	7000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,4 Dichlorobenzene	50(a)	3	0	0	0	0	0	0	0	0	0	0
Diethyl phthalate	63000(a)	3	0	0	0	0	0	0	0	0	0	0
Ethylbenzene	20(c)	3	0	0	0	0	0	0	0	0	0	0
Fluoranthene	3100(a)	3	0	0	0	0	0	0	0	0	0	0
Fluorene	3100(a)	3	0	0	0	0	0	0	0	0	0	0
Indeno(1,2,3-cd)pyrene	1.6(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Hexanone	3900(g)	3	0	0	0	0	0	0	0	0	0	0
2-Methyl(h)phthalene	2300(f)	3	0	0	0	0	0	0	0	0	0	0
4-Methyphenol	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
(h)phthalene	3100(a)	3	0	0	0	0	0	0	0	0	0	0
2-Nitrophenol	4800(i)	(l)	(l)	0	0	0	0	0	0	0	0	0
N-Nitrosodiphenylamine	240(a)	3	0	0	0	0	0	0	0	0	0	0
Pentachlorophenol	10(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Phe(h)threne	2,300(f)	3	0	0	0	0	0	0	0	0	0	0
Phenol	47000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,1,1-Trichloroethane	20(c)	3	0	0	0	0	0	0	0	0	0	0
Pyrene	2300(a)	3	0	0	0	0	0	0	0	0	0	0
Xylenes	20(c)	3	0	0	0	0	0	0	0	0	0	0
2,4-D	780(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDD	5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDE	3.5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Site: 116-N-2

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Aldrin	0.07(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1248	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1254	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1260	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Beta-BHC - Lindane	0.92(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Dieldrin	0.075(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Endrin	23(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
gamma-Chlordane	0.92(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Heptachlor	0.27(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Total TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Total Non-TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Radionuclide	**(pCi/g)**											
Americium-241	.06(p)	3	1	33	0	0	0	0	0	140	0	140
Beryllium-7	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbon-14	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cesium-134	.0388(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cesium-137	3.517(n)	3	1	33	0	0	0	0	0	140	0	140
Chromium-51	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt-58	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt-60	.0147(n)	3	2	67	0	0	0	0	0	281	0	281
Europium-152	.04(p)	(l)	(l)	0	0	0	0	0	0	0	0	0
Europium-154	.1151(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Europium-155	.0781(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Gross Alpha	8.4(o)	3	2	67	0	0	0	0	0	281	0	281
Gross Beta	16(o)	3	1	33	0	0	0	0	0	140	0	140
Plutonium-238	0.0045(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Plutonium-239/240	.0203(n)	3	1	33	0	0	0	0	0	140	0	140
Potassium-40	18.48(n)	3	0	0	0	0	0	0	0	0	0	0

Reference Site: 116-N-2

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Radium-226	1.037(n)	3	0	0	0	0	0	0	0	0	0	0
Sodium-22	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Strontium-90	0.3135(n)	3	0	0	0	0	0	0	0	0	0	0
Technetium-99	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Thorium-228	2.5(o)	3	0	0	0	0	0	0	0	0	0	0
Thorium-232	1.308(n)	3	0	0	0	0	0	0	0	0	0	0
Uranium-233/234	1.366(n)	3	0	0	0	0	0	0	0	0	0	0
Uranium-235	.0507(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Uranium-238	1.388(n)	3	0	0	0	0	0	0	0	0	0	0
Total Radioactive Waste (may include mixed waste)					0	0	0	0	0	281	0	281

Summary

	100-BC	100-DR	100-FR	100-HR	100-KR	100-NR	300-FF	Total
Total TSCA Mixed Waste	0	0	0	0	0	0	0	0
Total Non-TSCA Mixed Waste	0	0	0	0	0	0	0	0
Total Mixed Waste	0	0	0	0	0	0	0	0
Total Non-Radioactive TSCA Hazardous Waste	0	0	0	0	0	0	0	0
Total Non-Radioactive Hazardous Waste (Non-TSCA)	0	0	0	0	0	0	0	0
Total Hazardous Waste (Non-Radioactive)	0	0	0	0	0	0	0	0
Total Radioactive Waste (Non-Hazardous)	0	0	0	0	0	281	0	281

Reference Site: 120-N-1

Sub-Project	100-BC	100-DR	100-FR	100-HR	100-KR	100-NR	300-FF	TOTAL
Contaminated Volume (yd3)	0	6,403	0	0	730	43,098	0	50,231

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Inorganic	**(mg/kg)**											
Aluminum	230000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Antimony	31(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Arsenic	8.92(b)	(l)	(l)	0	0	0	0	0	0	0	0	0
Barium	5500(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Beryllium	1.77(b)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cadmium	2(c)	3	0	0	0	0	0	0	0	0	0	0
Chromium	100(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Copper	2900(a)	3	0	0	0	0	0	0	0	0	0	0
Iron	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Lead	250(c)	3	0	0	0	0	0	0	0	0	0	0
Magnesium	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Manganese	10,900(e)	3	0	0	0	0	0	0	0	0	0	0
Mercury	1.25(b)	(l)	(l)	0	0	0	0	0	0	0	0	0
Nickel	1600(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Potassium	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Selenium	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Silver	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Sodium	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Sulfate	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Thallium	5.5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Site: 120-N-1

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Vanadium	550(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
Zinc	23000(a)	3	0	0	0	0	0	0	0	0	0	0
Organic	**(mg/kg)**											
Acetone	7800(a)	3	0	0	0	0	0	0	0	0	0	0
Benzene	.5(c)	3	0	0	0	0	0	0	0	0	0	0
2-Butanone	47000(a)	3	0	0	0	0	0	0	0	0	0	0
Carbondisulfide	7800(a)	3	0	0	0	0	0	0	0	0	0	0
1,2-Dichloroethene (total)	700(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
4-Methyl-2-Pentanone	3900(a)	3	0	0	0	0	0	0	0	0	0	0
Methylene Chloride	.5(c)	3	0	0	0	0	0	0	0	0	0	0
Tetrachloroethene	.5(c)	(1)	(1)	0	0	0	0	0	0	0	0	0
Toluene	40(c)	3	0	0	0	0	0	0	0	0	0	0
Trichloroethene	.5(c)	(1)	(1)	0	0	0	0	0	0	0	0	0
Vinyl Chloride	0.63(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
Acenaphthene	4700(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
Anthracene	23000(a)	3	0	0	0	0	0	0	0	0	0	0
Benzo(a)anthracene	1.6(a)	3	0	0	0	0	0	0	0	0	0	0
Benzo(a)pyrene	0.16(a)	3	0	0	0	0	0	0	0	0	0	0
Benzo(b)fluoranthene	1.6(a)	3	0	0	0	0	0	0	0	0	0	0
Benzo(ghi)perylene	2300(f)	(1)	(1)	0	0	0	0	0	0	0	0	0
Benzo(k)fluoranthene	1.6(g)	(1)	(1)	0	0	0	0	0	0	0	0	0
Benzoic Acid	310000(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
Bis (2-ethylhexhl) phthalate	85(a)	3	0	0	0	0	0	0	0	0	0	0
Butylbenzylphthalate	16000(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
Carbazole	60(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
Carbon Tetracloride	9.2(a)	3	0	0	0	0	0	0	0	0	0	0
4-Chloro-3-Methylphenol	10(h)	(1)	(1)	0	0	0	0	0	0	0	0	0
2-Chlorophenol	390(a)	(1)	(1)	0	0	0	0	0	0	0	0	0

Reference Site: 120-N-1

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Chloroform	200(a)	3	0	0	0	0	0	0	0	0	0	0
4-Chloroaniline	310(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Chrysene	16(g)	3	0	0	0	0	0	0	0	0	0	0
Di-n-octyl-phthalate	1600(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Di-n-butyl-phthalate	7800(a)	3	0	0	0	0	0	0	0	0	0	0
Dibenzofuran	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,3 Dichlorobenzene	7000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,4 Dichlorobenzene	50(a)	3	0	0	0	0	0	0	0	0	0	0
Diethyl phthalate	63000(a)	3	0	0	0	0	0	0	0	0	0	0
Ethylbenzene	20(c)	3	0	0	0	0	0	0	0	0	0	0
Fluoranthene	3100(a)	3	0	0	0	0	0	0	0	0	0	0
Fluorene	3100(a)	3	0	0	0	0	0	0	0	0	0	0
Indeno(1,2,3-cd)pyrene	1.6(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Hexanone	3900(g)	3	0	0	0	0	0	0	0	0	0	0
2-Methylnaphthalene	2300(f)	3	0	0	0	0	0	0	0	0	0	0
4-Methyphenol	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Naphthalene	3100(a)	3	0	0	0	0	0	0	0	0	0	0
2-Nitrophenol	4800(i)	(l)	(l)	0	0	0	0	0	0	0	0	0
N-Nitrosodiphenylamine	240(a)	3	0	0	0	0	0	0	0	0	0	0
Pentachlorophenol	10(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Phenathrene	2,300(f)	3	0	0	0	0	0	0	0	0	0	0
Phenol	47000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,1,1-Trichloroethane	20(c)	3	0	0	0	0	0	0	0	0	0	0
Pyrene	2300(a)	3	0	0	0	0	0	0	0	0	0	0
Xylenes	20(c)	3	0	0	0	0	0	0	0	0	0	0
2,4-D	780(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDD	5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDE	3.5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Site: 120-N-1

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Aldrin	0.07(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1248	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1254	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1260	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Beta-BHC - Lindane	0.92(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Dieldrin	0.075(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Endrin	23(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
gamma-Chlordane	0.92(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Heptachlor	0.27(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Total TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Total Non-TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Radionuclide	**(pCi/g)**											
Americium-241	.06(p)	(l)	(l)	0	0	0	0	0	0	0	0	0
Beryllium-7	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbon-14	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cesium-134	.0388(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cesium-137	3.517(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Chromium-51	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt-58	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt-60	.0147(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Europium-152	.04(p)	(l)	(l)	0	0	0	0	0	0	0	0	0
Europium-154	.1151(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Europium-155	.0781(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Gross Alpha	8.4(o)	(l)	(l)	0	0	0	0	0	0	0	0	0
Gross Beta	16(o)	(l)	(l)	0	0	0	0	0	0	0	0	0
Plutonium-238	0.0045(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Plutonium-239/240	.0203(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Potassium-40	18.48(n)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Site: 120-N-1

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Radium-226	1.037(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Sodium-22	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Strontium-90	0.3135(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Technetium-99	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Thorium-228	2.5(o)	(l)	(l)	0	0	0	0	0	0	0	0	0
Thorium-232	1.308(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Uranium-233/234	1.366(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Uranium-235	.0507(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Uranium-238	1.388(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Total Radioactive Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Summary												
Total TSCA Mixed Waste					0	0	0	0	0	0	0	0
Total Non-TSCA Mixed Waste					0	0	0	0	0	0	0	0
Total Mixed Waste					0	0	0	0	0	0	0	0
Total Non-Radioactive TSCA Hazardous Waste					0	0	0	0	0	0	0	0
Total Non-Radioactive Hazardous Waste (Non-TSCA)					0	0	0	0	0	0	0	0
Total Hazardous Waste (Non-Radioactive)					0	0	0	0	0	0	0	0
Total Radioactive Waste (Non-Hazardous)					0	0	0	0	0	0	0	0

Reference Site: 120-N-2

Sub-Project	100-BC	100-DR	100-FR	100-HR	100-KR	100-NR	300-FF	TOTAL
Contaminated Volume (yd3)	0	0	0	0	0	2,021	0	2,021

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Inorganic	**(mg/kg)**											
Aluminum	230000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Antimony	31(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Arsenic	8.92(b)	(l)	(l)	0	0	0	0	0	0	0	0	0
Barium	5500(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Beryllium	1.77(b)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cadmium	2(c)	3	1	33	0	0	0	0	0	674	0	674
Chromium	100(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Copper	2900(a)	3	0	0	0	0	0	0	0	0	0	0
Iron	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Lead	250(c)	3	0	0	0	0	0	0	0	0	0	0
Magnesium	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Manganese	10,900(e)	3	0	0	0	0	0	0	0	0	0	0
Mercury	1.25(b)	(l)	(l)	0	0	0	0	0	0	0	0	0
Nickel	1600(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Potassium	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Selenium	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Silver	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Sodium	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Sulfate	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Thallium	5.5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Site: 120-N-2

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Vanadium	550(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Zinc	23000(a)	3	0	0	0	0	0	0	0	0	0	0
Organic	**(mg/kg)**											
Acetone	7800(a)	3	0	0	0	0	0	0	0	0	0	0
Benzene	.5(c)	3	0	0	0	0	0	0	0	0	0	0
2-Butanone	47000(a)	3	0	0	0	0	0	0	0	0	0	0
Carbondisulfide	7800(a)	3	0	0	0	0	0	0	0	0	0	0
1,2-Dichloroethene (total)	700(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Methyl-2-Pentanone	3900(a)	3	0	0	0	0	0	0	0	0	0	0
Methylene Chloride	.5(c)	3	0	0	0	0	0	0	0	0	0	0
Tetrachloroethene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Toluene	40(c)	3	0	0	0	0	0	0	0	0	0	0
Trichloroethene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Vinyl Chloride	0.63(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Acenaphthene	4700(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Anthracene	23000(a)	3	0	0	0	0	0	0	0	0	0	0
Benzo(a)anthracene	1.6(a)	3	0	0	0	0	0	0	0	0	0	0
Benzo(a)pyrene	0.16(a)	3	0	0	0	0	0	0	0	0	0	0
Benzo(b)fluoranthene	1.6(a)	3	0	0	0	0	0	0	0	0	0	0
Benzo(ghi)perylene	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
Benzo(k)fluoranthene	1.6(g)	(l)	(l)	0	0	0	0	0	0	0	0	0
Benzoic Acid	310000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Bis (2-ethylhexhl) phthalate	85(a)	3	0	0	0	0	0	0	0	0	0	0
Butylbenzylphthalate	16000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbazole	60(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbon Tetracloride	9.2(a)	3	0	0	0	0	0	0	0	0	0	0
4-Chloro-3-Methylphenol	10(h)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Chlorophenol	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Site: 120-N-2

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Chloroform	200(a)	3	0	0	0	0	0	0	0	0	0	0
4-Chloroaniline	310(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Chrysene	16(g)	3	0	0	0	0	0	0	0	0	0	0
Di-n-octyl-phthalate	1600(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Di-n-butyl-phthalate	7800(a)	3	0	0	0	0	0	0	0	0	0	0
Dibenzofuran	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,3 Dichlorobenzene	7000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,4 Dichlorobenzene	50(a)	3	0	0	0	0	0	0	0	0	0	0
Diethyl phthalate	63000(a)	3	0	0	0	0	0	0	0	0	0	0
Ethylbenzene	20(c)	3	0	0	0	0	0	0	0	0	0	0
Fluoranthene	3100(a)	3	0	0	0	0	0	0	0	0	0	0
Fluorene	3100(a)	3	0	0	0	0	0	0	0	0	0	0
Indeno(1,2,3-cd)pyrene	1.6(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Hexanone	3900(g)	3	0	0	0	0	0	0	0	0	0	0
2-Methylnaphthalene	2300(f)	3	0	0	0	0	0	0	0	0	0	0
4-Methyphenol	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Naphthalene	3100(a)	3	0	0	0	0	0	0	0	0	0	0
2-Nitrophenol	4800(i)	(l)	(l)	0	0	0	0	0	0	0	0	0
N-Nitrosodiphenylamine	240(a)	3	0	0	0	0	0	0	0	0	0	0
Pentachlorophenol	10(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Phenathrene	2,300(f)	3	0	0	0	0	0	0	0	0	0	0
Phenol	47000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,1,1-Trichloroethane	20(c)	3	0	0	0	0	0	0	0	0	0	0
Pyrene	2300(a)	3	0	0	0	0	0	0	0	0	0	0
Xylenes	20(c)	3	0	0	0	0	0	0	0	0	0	0
2,4-D	780(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDD	5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDE	3.5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Site: 120-N-2

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Aldrin	0.07(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1248	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1254	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1260	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Beta-BHC - Lindane	0.92(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Dieldrin	0.075(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Endrin	23(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
gamma-Chlordane	0.92(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Heptachlor	0.27(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Total TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Total Non-TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	674	0	674
Radionuclide	**(pCi/g)**											
Americium-241	.06(p)	(l)	(l)	0	0	0	0	0	0	0	0	0
Beryllium-7	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbon-14	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cesium-134	.0388(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cesium-137	3.517(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Chromium-51	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt-58	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt-60	.0147(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Europium-152	.04(p)	(l)	(l)	0	0	0	0	0	0	0	0	0
Europium-154	.1151(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Europium-155	.0781(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Gross Alpha	8.4(o)	(l)	(l)	0	0	0	0	0	0	0	0	0
Gross Beta	16(o)	(l)	(l)	0	0	0	0	0	0	0	0	0
Plutonium-238	0.0045(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Plutonium-239/240	.0203(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Potassium-40	18.48(n)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Site: 120-N-2

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Radium-226	1.037(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Sodium-22	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Strontium-90	0.3135(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Technetium-99	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Thorium-228	2.5(o)	(l)	(l)	0	0	0	0	0	0	0	0	0
Thorium-232	1.308(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Uranium-233/234	1.366(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Uranium-235	.0507(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Uranium-238	1.388(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Total Radioactive Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Summary												
Total TSCA Mixed Waste					0	0	0	0	0	0	0	0
Total Non-TSCA Mixed Waste					0	0	0	0	0	0	0	0
Total Mixed Waste					0	0	0	0	0	0	0	0
Total Non-Radioactive TSCA Hazardous Waste					0	0	0	0	0	0	0	0
Total Non-Radioactive Hazardous Waste (Non-TSCA)					0	0	0	0	0	674	0	674
Total Hazardous Waste (Non-Radioactive)					0	0	0	0	0	674	0	674
Total Radioactive Waste (Non-Hazardous)					0	0	0	0	0	0	0	0

Reference Site: 130-D-1

Sub-Project	100-BC	100-DR	100-FR	100-HR	100-KR	100-NR	300-FF	TOTAL
Contaminated Volume (yd3)	0	77	0	0	148	107	0	332

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Inorganic	**(mg/kg)**											
Aluminum	230000(a)	2	0	0	0	0	0	0	0	0	0	0
Antimony	31(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Arsenic	8.92(b)	2	0	0	0	0	0	0	0	0	0	0
Barium	5500(a)	2	0	0	0	0	0	0	0	0	0	0
Beryllium	1.77(b)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cadmium	2(c)	2	0	0	0	0	0	0	0	0	0	0
Chromium	100(c)	2	0	0	0	0	0	0	0	0	0	0
Cobalt	(d)	2	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Copper	2900(a)	2	0	0	0	0	0	0	0	0	0	0
Iron	(d)	2	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Lead	250(c)	2	0	0	0	0	0	0	0	0	0	0
Magnesium	(d)	2	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Manganese	10,900(e)	2	0	0	0	0	0	0	0	0	0	0
Mercury	1.25(b)	2	0	0	0	0	0	0	0	0	0	0
Nickel	1600(a)	2	0	0	0	0	0	0	0	0	0	0
Potassium	(d)	2	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Selenium	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Silver	390(a)	2	0	0	0	0	0	0	0	0	0	0
Sodium	(d)	2	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Sulfate	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Thallium	5.5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Site: 130-D-1

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Vanadium	550(a)	2	0	0	0	0	0	0	0	0	0	0
Zinc	23000(a)	2	0	0	0	0	0	0	0	0	0	0
Organic	**(mg/kg)**											
Acetone	7800(a)	2	0	0	0	0	0	0	0	0	0	0
Benzene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Butanone	47000(a)	2	0	0	0	0	0	0	0	0	0	0
Carbondisulfide	7800(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,2-Dichloroethene (total)	700(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Methyl-2-Pentanone	3900(a)	2	0	0	0	0	0	0	0	0	0	0
Methylene Chloride	.5(c)	2	0	0	0	0	0	0	0	0	0	0
Tetrachloroethene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Toluene	40(c)	2	0	0	0	0	0	0	0	0	0	0
Trichloroethene	.5(c)	2	0	0	0	0	0	0	0	0	0	0
Vinyl Chloride	0.63(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Acenaphthene	4700(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Anthracene	23000(a)	2	0	0	0	0	0	0	0	0	0	0
Benzo(a)anthracene	1.6(a)	2	0	0	0	0	0	0	0	0	0	0
Benzo(a)pyrene	0.16(a)	2	0	0	0	0	0	0	0	0	0	0
Benzo(b)fluoranthene	1.6(a)	2	0	0	0	0	0	0	0	0	0	0
Benzo(ghi)perylene	2300(f)	2	0	0	0	0	0	0	0	0	0	0
Benzo(k)fluoranthene	1.6(g)	2	0	0	0	0	0	0	0	0	0	0
Benzoic Acid	310000(a)	2	0	0	0	0	0	0	0	0	0	0
Bis (2-ethylhexhl) phthalate	85(a)	2	0	0	0	0	0	0	0	0	0	0
Butylbenzylphthalate	16000(a)	2	0	0	0	0	0	0	0	0	0	0
Carbazole	60(a)	2	0	0	0	0	0	0	0	0	0	0
Carbon Tetracloride	9.2(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Chloro-3-Methylphenol	10(h)	2	0	0	0	0	0	0	0	0	0	0
2-Chlorophenol	390(a)	2	0	0	0	0	0	0	0	0	0	0

Reference Site: 130-D-1

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Chloroform	200(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Chloroaniline	310(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Chrysene	16(g)	2	0	0	0	0	0	0	0	0	0	0
Di-n-octyl-phthalate	1600(a)	2	0	0	0	0	0	0	0	0	0	0
Di-n-butyl-phthalate	7800(a)	2	0	0	0	0	0	0	0	0	0	0
Dibenzofuran	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,3 Dichlorobenzene	7000(a)	2	0	0	0	0	0	0	0	0	0	0
1,4 Dichlorobenzene	50(a)	2	0	0	0	0	0	0	0	0	0	0
Diethyl phthalate	63000(a)	2	0	0	0	0	0	0	0	0	0	0
Ethylbenzene	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Fluoranthene	3100(a)	2	0	0	0	0	0	0	0	0	0	0
Fluorene	3100(a)	2	0	0	0	0	0	0	0	0	0	0
Indeno(1,2,3-cd)pyrene	1.6(a)	2	0	0	0	0	0	0	0	0	0	0
2-Hexanone	3900(g)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Methylnaphthalene	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Methyphenol	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Naphthalene	3100(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Nitrophenol	4800(i)	2	0	0	0	0	0	0	0	0	0	0
N-Nitrosodiphenylamine	240(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Pentachlorophenol	10(a)	2	0	0	0	0	0	0	0	0	0	0
Phenathrene	2,300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
Phenol	47000(a)	2	0	0	0	0	0	0	0	0	0	0
1,1,1-Trichloroethane	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Pyrene	2300(a)	2	0	0	0	0	0	0	0	0	0	0
Xylenes	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
2,4-D	780(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDD	5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDE	3.5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Site: 130-D-1

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Aldrin	0.07(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1248	0.16(a)	2	0	0	0	0	0	0	0	0	0	0
Aroclor-1254	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1260	0.16(a)	2	0	0	0	0	0	0	0	0	0	0
Beta-BHC - Lindane	0.92(a)	2	0	0	0	0	0	0	0	0	0	0
Dieldrin	0.075(a)	2	0	0	0	0	0	0	0	0	0	0
Endrin	23(a)	2	0	0	0	0	0	0	0	0	0	0
gamma-Chlordane	0.92(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Heptachlor	0.27(a)	2	0	0	0	0	0	0	0	0	0	0
Total TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Total Non-TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Radionuclide	**(pCi/g)**											
Americium-241	.06(p)	4	0	0	0	0	0	0	0	0	0	0
Beryllium-7	0(n)	3	0	0	0	0	0	0	0	0	0	0
Carbon-14	0(n)	4	4	100	0	77	0	0	148	107	0	332
Cesium-134	.0388(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cesium-137	3.517(n)	3	0	0	0	0	0	0	0	0	0	0
Chromium-51	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt-58	0(n)	3	0	0	0	0	0	0	0	0	0	0
Cobalt-60	.0147(n)	3	0	0	0	0	0	0	0	0	0	0
Europium-152	.04(p)	3	0	0	0	0	0	0	0	0	0	0
Europium-154	.1151(n)	3	0	0	0	0	0	0	0	0	0	0
Europium-155	.0781(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Gross Alpha	8.4(o)	4	0	0	0	0	0	0	0	0	0	0
Gross Beta	16(o)	4	3	75	0	58	0	0	111	80	0	249
Plutonium-238	0.0045(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Plutonium-239/240	.0203(n)	4	0	0	0	0	0	0	0	0	0	0
Potassium-40	18.48(n)	4	0	0	0	0	0	0	0	0	0	0

Reference Site: 130-D-1

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Radium-226	1.037(n)	4	0	0	0	0	0	0	0	0	0	0
Sodium-22	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Strontium-90	0.3135(n)	3	0	0	0	0	0	0	0	0	0	0
Technetium-99	0(n)	4	2	50	0	39	0	0	74	54	0	166
Thorium-228	2.5(o)	4	0	0	0	0	0	0	0	0	0	0
Thorium-232	1.308(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Uranium-233/234	1.366(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Uranium-235	.0507(n)	4	0	0	0	0	0	0	0	0	0	0
Uranium-238	1.388(n)	4	0	0	0	0	0	0	0	0	0	0
Total Radioactive Waste (may include mixed waste)					0	77	0	0	148	107	0	332
Summary												
Total TSCA Mixed Waste					0	0	0	0	0	0	0	0
Total Non-TSCA Mixed Waste					0	0	0	0	0	0	0	0
Total Mixed Waste					0	0	0	0	0	0	0	0
Total Non-Radioactive TSCA Hazardous Waste					0	0	0	0	0	0	0	0
Total Non-Radioactive Hazardous Waste (Non-TSCA)					0	0	0	0	0	0	0	0
Total Hazardous Waste (Non-Radioactive)					0	0	0	0	0	0	0	0
Total Radioactive Waste (Non-Hazardous)					0	77	0	0	148	107	0	332

Reference Site: 132-D-3

Sub-Project	100-BC	100-DR	100-FR	100-HR	100-KR	100-NR	300-FF	TOTAL
Contaminated Volume (yd3)	63	1,092	1,273	1,788	0	0	0	4,216

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Inorganic	**(mg/kg)**											
Aluminum	230000(a)	5	0	0	0	0	0	0	0	0	0	0
Antimony	31(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Arsenic	8.92(b)	5	0	0	0	0	0	0	0	0	0	0
Barium	5500(a)	5	0	0	0	0	0	0	0	0	0	0
Beryllium	1.77(b)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cadmium	2(c)	5	0	0	0	0	0	0	0	0	0	0
Chromium	100(c)	5	0	0	0	0	0	0	0	0	0	0
Cobalt	(d)	5	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Copper	2900(a)	5	0	0	0	0	0	0	0	0	0	0
Iron	(d)	5	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Lead	250(c)	5	0	0	0	0	0	0	0	0	0	0
Magnesium	(d)	5	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Manganese	10,900(e)	5	0	0	0	0	0	0	0	0	0	0
Mercury	1.25(b)	5	0	0	0	0	0	0	0	0	0	0
Nickel	1600(a)	5	0	0	0	0	0	0	0	0	0	0
Potassium	(d)	5	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Selenium	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Silver	390(a)	5	0	0	0	0	0	0	0	0	0	0
Sodium	(d)	5	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Sulfate	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Thallium	5.5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Site: 132-D-3

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Vanadium	550(a)	5	0	0	0	0	0	0	0	0	0	0
Zinc	23000(a)	5	0	0	0	0	0	0	0	0	0	0
Organic	**(mg/kg)**											
Acetone	7800(a)	5	0	0	0	0	0	0	0	0	0	0
Benzene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Butanone	47000(a)	5	0	0	0	0	0	0	0	0	0	0
Carbondisulfide	7800(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,2-Dichloroethene (total)	700(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Methyl-2-Pentanone	3900(a)	5	0	0	0	0	0	0	0	0	0	0
Methylene Chloride	.5(c)	5	0	0	0	0	0	0	0	0	0	0
Tetrachloroethene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Toluene	40(c)	5	0	0	0	0	0	0	0	0	0	0
Trichloroethene	.5(c)	5	0	0	0	0	0	0	0	0	0	0
Vinyl Chloride	0.63(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Acenaphthene	4700(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Anthracene	23000(a)	4	0	0	0	0	0	0	0	0	0	0
Benzo(a)anthracene	1.6(a)	4	0	0	0	0	0	0	0	0	0	0
Benzo(a)pyrene	0.16(a)	4	0	0	0	0	0	0	0	0	0	0
Benzo(b)fluoranthene	1.6(a)	4	0	0	0	0	0	0	0	0	0	0
Benzo(ghi)perylene	2300(f)	4	0	0	0	0	0	0	0	0	0	0
Benzo(k)fluoranthene	1.6(g)	4	0	0	0	0	0	0	0	0	0	0
Benzoic Acid	310000(a)	4	0	0	0	0	0	0	0	0	0	0
Bis (2-ethylhexhl) phthalate	85(a)	4	0	0	0	0	0	0	0	0	0	0
Butylbenzylphthalate	16000(a)	4	0	0	0	0	0	0	0	0	0	0
Carbazole	60(a)	4	0	0	0	0	0	0	0	0	0	0
Carbon Tetracloride	9.2(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Chloro-3-Methylphenol	10(h)	4	0	0	0	0	0	0	0	0	0	0
2-Chlorophenol	390(a)	4	0	0	0	0	0	0	0	0	0	0

Reference Site: 132-D-3

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Chloroform	200(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Chloroaniline	310(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Chrysene	16(g)	4	0	0	0	0	0	0	0	0	0	0
Di-n-octyl-phthalate	1600(a)	4	0	0	0	0	0	0	0	0	0	0
Di-n-butyl-phthalate	7800(a)	4	0	0	0	0	0	0	0	0	0	0
Dibenzofuran	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,3 Dichlorobenzene	7000(a)	4	0	0	0	0	0	0	0	0	0	0
1,4 Dichlorobenzene	50(a)	4	0	0	0	0	0	0	0	0	0	0
Diethyl phthalate	63000(a)	4	0	0	0	0	0	0	0	0	0	0
Ethylbenzene	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Fluoranthene	3100(a)	4	0	0	0	0	0	0	0	0	0	0
Fluorene	3100(a)	4	0	0	0	0	0	0	0	0	0	0
Indeno(1,2,3-cd)pyrene	1.6(a)	4	0	0	0	0	0	0	0	0	0	0
2-Hexanone	3900(g)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Methylnaphthalene	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Methyphenol	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Naphthalene	3100(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Nitrophenol	4800(i)	4	0	0	0	0	0	0	0	0	0	0
N-Nitrosodiphenylamine	240(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Pentachlorophenol	10(a)	4	0	0	0	0	0	0	0	0	0	0
Phenathrene	2,300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
Phenol	47000(a)	4	0	0	0	0	0	0	0	0	0	0
1,1,1-Trichloroethane	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Pyrene	2300(a)	4	0	0	0	0	0	0	0	0	0	0
Xylenes	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
2,4-D	780(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDD	5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDE	3.5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Site: 132-D-3

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Aldrin	0.07(a)	4	0	0	0	0	0	0	0	0	0	0
Aroclor-1248	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1254	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1260	0.16(a)	4	0	0	0	0	0	0	0	0	0	0
Beta-BHC - Lindane	0.92(a)	4	0	0	0	0	0	0	0	0	0	0
Dieldrin	0.075(a)	4	0	0	0	0	0	0	0	0	0	0
Endrin	23(a)	4	0	0	0	0	0	0	0	0	0	0
gamma-Chlordane	0.92(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Heptachlor	0.27(a)	4	0	0	0	0	0	0	0	0	0	0
Total TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Total Non-TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Radionuclide	**(pCi/g)**											
Americium-241	.06(p)	5	0	0	0	0	0	0	0	0	0	0
Beryllium-7	0(n)	5	0	0	0	0	0	0	0	0	0	0
Carbon-14	0(n)	5	3	0	0	0	0	0	0	0	0	0
Cesium-134	.0388(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cesium-137	3.517(n)	5	0	0	0	0	0	0	0	0	0	0
Chromium-51	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt-58	0(n)	5	0	0	0	0	0	0	0	0	0	0
Cobalt-60	.0147(n)	5	0	0	0	0	0	0	0	0	0	0
Europium-152	.04(p)	5	0	0	0	0	0	0	0	0	0	0
Europium-154	.1151(n)	5	0	0	0	0	0	0	0	0	0	0
Europium-155	.0781(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Gross Alpha	8.4(o)	5	0	0	0	0	0	0	0	0	0	0
Gross Beta	16(o)	5	5	0	0	0	0	0	0	0	0	0
Plutonium-238	0.0045(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Plutonium-239/240	.0203(n)	5	0	0	0	0	0	0	0	0	0	0
Potassium-40	18.48(n)	5	0	0	0	0	0	0	0	0	0	0

Reference Site: 132-D-3

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Radium-226	1.037(n)	5	0	0	0	0	0	0	0	0	0	0
Sodium-22	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Strontium-90	0.3135(n)	5	1	0	0	0	0	0	0	0	0	0
Technetium-99	0(n)	5	0	0	0	0	0	0	0	0	0	0
Thorium-228	2.5(o)	5	0	0	0	0	0	0	0	0	0	0
Thorium-232	1.308(n)	2	0	0	0	0	0	0	0	0	0	0
Uranium-233/234	1.366(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Uranium-235	.0507(n)	5	0	0	0	0	0	0	0	0	0	0
Uranium-238	1.388(n)	5	0	0	0	0	0	0	0	0	0	0
Total Radioactive Waste (may include mixed waste)					0	0	0	0	0	0	0	0

Summary

Total TSCA Mixed Waste	0	0	0	0	0	0	0	0
Total Non-TSCA Mixed Waste	0	0	0	0	0	0	0	0
Total Mixed Waste	0	0	0	0	0	0	0	0
Total Non-Radioactive TSCA Hazardous Waste	0	0	0	0	0	0	0	0
Total Non-Radioactive Hazardous Waste (Non-TSCA)	0	0	0	0	0	0	0	0
Total Hazardous Waste (Non-Radioactive)	0	0	0	0	0	0	0	0
Total Radioactive Waste (Non-Hazardous)	0	0	0	0	0	0	0	0

Reference Site: 132-D-3

Sub-Project	100-BC	100-DR	100-FR	100-HR	100-KR	100-NR	300-FF	TOTAL
Contaminated Volume (yd3)	63	1,092	1,273	1,788	0	0	0	4,216

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Inorganic	**(mg/kg)**											
Aluminum	230000(a)	5	0	0	0	0	0	0	0	0	0	0
Antimony	31(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Arsenic	8.92(b)	5	0	0	0	0	0	0	0	0	0	0
Barium	5500(a)	5	0	0	0	0	0	0	0	0	0	0
Beryllium	1.77(b)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cadmium	2(c)	5	0	0	0	0	0	0	0	0	0	0
Chromium	100(c)	5	0	0	0	0	0	0	0	0	0	0
Cobalt	(d)	5	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Copper	2900(a)	5	0	0	0	0	0	0	0	0	0	0
Iron	(d)	5	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Lead	250(c)	5	0	0	0	0	0	0	0	0	0	0
Magnesium	(d)	5	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Manganese	10,900(e)	5	0	0	0	0	0	0	0	0	0	0
Mercury	1.25(b)	5	0	0	0	0	0	0	0	0	0	0
Nickel	1600(a)	5	0	0	0	0	0	0	0	0	0	0
Potassium	(d)	5	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Selenium	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Silver	390(a)	5	0	0	0	0	0	0	0	0	0	0
Sodium	(d)	5	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Sulfate	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Thallium	5.5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Site: 132-D-3

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Vanadium	550(a)	5	0	0	0	0	0	0	0	0	0	0
Zinc	23000(a)	5	0	0	0	0	0	0	0	0	0	0
Organic	**(mg/kg)**											
Acetone	7800(a)	5	0	0	0	0	0	0	0	0	0	0
Benzene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Butanone	47000(a)	5	0	0	0	0	0	0	0	0	0	0
Carbondisulfide	7800(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,2-Dichloroethene (total)	700(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Methyl-2-Pentanone	3900(a)	5	0	0	0	0	0	0	0	0	0	0
Methylene Chloride	.5(c)	5	0	0	0	0	0	0	0	0	0	0
Tetrachloroethene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Toluene	40(c)	5	0	0	0	0	0	0	0	0	0	0
Trichloroethene	.5(c)	5	0	0	0	0	0	0	0	0	0	0
Vinyl Chloride	0.63(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Acenaphthene	4700(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Anthracene	23000(a)	4	0	0	0	0	0	0	0	0	0	0
Benzo(a)anthracene	1.6(a)	4	0	0	0	0	0	0	0	0	0	0
Benzo(a)pyrene	0.16(a)	4	0	0	0	0	0	0	0	0	0	0
Benzo(b)fluoranthene	1.6(a)	4	0	0	0	0	0	0	0	0	0	0
Benzo(ghi)perylene	2300(f)	4	0	0	0	0	0	0	0	0	0	0
Benzo(k)fluoranthene	1.6(g)	4	0	0	0	0	0	0	0	0	0	0
Benzoic Acid	310000(a)	4	0	0	0	0	0	0	0	0	0	0
Bis (2-ethylhexhl) phthalate	85(a)	4	0	0	0	0	0	0	0	0	0	0
Butylbenzylphthalate	16000(a)	4	0	0	0	0	0	0	0	0	0	0
Carbazole	60(a)	4	0	0	0	0	0	0	0	0	0	0
Carbon Tetracloride	9.2(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Chloro-3-Methylphenol	10(h)	4	0	0	0	0	0	0	0	0	0	0
2-Chlorophenol	390(a)	4	0	0	0	0	0	0	0	0	0	0

Reference Site: 132-D-3

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Chloroform	200(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Chloroaniline	310(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Chrysene	16(g)	4	0	0	0	0	0	0	0	0	0	0
Di-n-octyl-phthalate	1600(a)	4	0	0	0	0	0	0	0	0	0	0
Di-n-butyl-phthalate	7800(a)	4	0	0	0	0	0	0	0	0	0	0
Dibenzofuran	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,3 Dichlorobenzene	7000(a)	4	0	0	0	0	0	0	0	0	0	0
1,4 Dichlorobenzene	50(a)	4	0	0	0	0	0	0	0	0	0	0
Diethyl phthalate	63000(a)	4	0	0	0	0	0	0	0	0	0	0
Ethylbenzene	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Fluoranthene	3100(a)	4	0	0	0	0	0	0	0	0	0	0
Fluorene	3100(a)	4	0	0	0	0	0	0	0	0	0	0
Indeno(1,2,3-cd)pyrene	1.6(a)	4	0	0	0	0	0	0	0	0	0	0
2-Hexanone	3900(g)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Methylnaphthalene	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Methyphenol	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Naphthalene	3100(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Nitrophenol	4800(i)	4	0	0	0	0	0	0	0	0	0	0
N-Nitrosodiphenylamine	240(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Pentachlorophenol	10(a)	4	0	0	0	0	0	0	0	0	0	0
Phenathrene	2,300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
Phenol	47000(a)	4	0	0	0	0	0	0	0	0	0	0
1,1,1-Trichloroethane	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Pyrene	2300(a)	4	0	0	0	0	0	0	0	0	0	0
Xylenes	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
2,4-D	780(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDD	5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDE	3.5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Site: 132-D-3

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Aldrin	0.07(a)	4	0	0	0	0	0	0	0	0	0	0
Aroclor-1248	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1254	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1260	0.16(a)	4	0	0	0	0	0	0	0	0	0	0
Beta-BHC - Lindane	0.92(a)	4	0	0	0	0	0	0	0	0	0	0
Dieldrin	0.075(a)	4	0	0	0	0	0	0	0	0	0	0
Endrin	23(a)	4	0	0	0	0	0	0	0	0	0	0
gamma-Chlordane	0.92(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Heptachlor	0.27(a)	4	0	0	0	0	0	0	0	0	0	0
Total TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Total Non-TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Radionuclide	**(pCi/g)**											
Americium-241	.06(p)	5	0	0	0	0	0	0	0	0	0	0
Beryllium-7	0(n)	5	0	0	0	0	0	0	0	0	0	0
Carbon-14	0(n)	5	3	0	0	0	0	0	0	0	0	0
Cesium-134	.0388(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cesium-137	3.517(n)	5	0	0	0	0	0	0	0	0	0	0
Chromium-51	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt-58	0(n)	5	0	0	0	0	0	0	0	0	0	0
Cobalt-60	.0147(n)	5	0	0	0	0	0	0	0	0	0	0
Europium-152	.04(p)	5	0	0	0	0	0	0	0	0	0	0
Europium-154	.1151(n)	5	0	0	0	0	0	0	0	0	0	0
Europium-155	.0781(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Gross Alpha	8.4(o)	5	0	0	0	0	0	0	0	0	0	0
Gross Beta	16(o)	5	5	0	0	0	0	0	0	0	0	0
Plutonium-238	0.0045(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Plutonium-239/240	.0203(n)	5	0	0	0	0	0	0	0	0	0	0
Potassium-40	18.48(n)	5	0	0	0	0	0	0	0	0	0	0

Reference Site: 132-D-3

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Radium-226	1.037(n)	5	0	0	0	0	0	0	0	0	0	0
Sodium-22	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Strontium-90	0.3135(n)	5	1	0	0	0	0	0	0	0	0	0
Technetium-99	0(n)	5	0	0	0	0	0	0	0	0	0	0
Thorium-228	2.5(o)	5	0	0	0	0	0	0	0	0	0	0
Thorium-232	1.308(n)	2	0	0	0	0	0	0	0	0	0	0
Uranium-233/234	1.366(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Uranium-235	.0507(n)	5	0	0	0	0	0	0	0	0	0	0
Uranium-238	1.388(n)	5	0	0	0	0	0	0	0	0	0	0
Total Radioactive Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Summary												
Total TSCA Mixed Waste					0	0	0	0	0	0	0	0
Total Non-TSCA Mixed Waste					0	0	0	0	0	0	0	0
Total Mixed Waste					0	0	0	0	0	0	0	0
Total Non-Radioactive TSCA Hazardous Waste					0	0	0	0	0	0	0	0
Total Non-Radioactive Hazardous Waste (Non-TSCA)					0	0	0	0	0	0	0	0
Total Hazardous Waste (Non-Radioactive)					0	0	0	0	0	0	0	0
Total Radioactive Waste (Non-Hazardous)					0	0	0	0	0	0	0	0

Reference Sites: 1607-H2, 1607-H4

Sub-Project	100-BC	100-DR	100-FR	100-HR	100-KR	100-NR	300-FF	TOTAL
Contaminated Volume (yd3)	11,664	10,439	11,063	2,850	1,434	43,888	3,961	85,299

Constituent	Cut-off Limit	Number of Sampled Sites	Number of Sites Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Inorganic	**(mg/kg)**											
Aluminum	230000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Antimony	31(a)	2	0	0	0	0	0	0	0	0	0	0
Arsenic	8.92(b)	2	1	50	5,832	5,220	5,532	1,425	717	21,944	1,981	42,650
Barium	5500(a)	2	0	0	0	0	0	0	0	0	0	0
Beryllium	1.77(b)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cadmium	2(c)	2	1	50	5,832	5,220	5,532	1,425	717	21,944	1,981	42,650
Chromium	100(c)	2	1	50	5,832	5,220	5,532	1,425	717	21,944	1,981	42,650
Cobalt	(d)	(l)	(l)	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Copper	2900(a)	2	0	0	0	0	0	0	0	0	0	0
Iron	(d)	(l)	(l)	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Lead	250(c)	2	1	50	5,832	5,220	5,532	1,425	717	21,944	1,981	42,650
Magnesium	(d)	(l)	(l)	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Manganese	10,900(e)	(l)	(l)	0	0	0	0	0	0	0	0	0
Mercury	1.25(b)	2	1	50	5,832	5,220	5,532	1,425	717	21,944	1,981	42,650
Nickel	1600(a)	2	0	0	0	0	0	0	0	0	0	0
Potassium	(d)	(l)	(l)	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Selenium	390(a)	2	0	0	0	0	0	0	0	0	0	0
Silver	390(a)	2	0	0	0	0	0	0	0	0	0	0
Sodium	(d)	(l)	(l)	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Sulfate	(d)	1	0	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Thallium	5.5(a)	2	0	0	0	0	0	0	0	0	0	0

Reference Sites: 1607-H2, 1607-H4

Constituent	Cut-off Limit	Number of Sampled Sites	Number of Sites Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Vanadium	550(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Zinc	23000(a)	2	0	0	0	0	0	0	0	0	0	0
Organic	**(mg/kg)**											
Acetone	7800(a)	3	0	0	0	0	0	0	0	0	0	0
Benzene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Butanone	47000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbondisulfide	7800(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,2-Dichloroethene (total)	700(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Methyl-2-Pentanone	3900(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Methylene Chloride	.5(c)	3	0	0	0	0	0	0	0	0	0	0
Tetrachloroethene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Toluene	40(c)	3	0	0	0	0	0	0	0	0	0	0
Trichloroethene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Vinyl Chloride	0.63(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Acenaphthene	4700(a)	1	0	0	0	0	0	0	0	0	0	0
Anthracene	23000(a)	1	0	0	0	0	0	0	0	0	0	0
Benzo(a)anthracene	1.6(a)	1	1	100	11,664	10,439	11,063	2,850	1,434	43,888	3,961	85,299
Benzo(a)pyrene	0.16(a)	1	1	100	11,664	10,439	11,063	2,850	1,434	43,888	3,961	85,299
Benzo(b)fluoranthene	1.6(a)	1	1	100	11,664	10,439	11,063	2,850	1,434	43,888	3,961	85,299
Benzo(ghi)perylene	2300(f)	1	0	0	0	0	0	0	0	0	0	0
Benzo(k)fluoranthene	1.6(g)	1	0	0	0	0	0	0	0	0	0	0
Benzoic Acid	310000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Bis (2-ethylhexhl) phthalate	85(a)	1	0	0	0	0	0	0	0	0	0	0
Butylbenzylphthalate	16000(a)	1	0	0	0	0	0	0	0	0	0	0
Carbazole	60(a)	1	0	0	0	0	0	0	0	0	0	0
Carbon Tetracloride	9.2(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Chloro-3-Methylphenol	10(h)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Chlorophenol	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Sites: 1607-H2, 1607-H4

Constituent	Cut-off Limit	Number of Sampled Sites	Number of Sites Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Chloroform	200(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Chloroaniline	310(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Chrysene	16(g)	1	0	0	0	0	0	0	0	0	0	0
Di-n-octyl-phthalate	1600(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Di-n-butyl-phthalate	7800(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Dibenzofuran	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,3 Dichlorobenzene	7000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,4 Dichlorobenzene	50(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Diethyl phthalate	63000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Ethylbenzene	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Fluoranthene	3100(a)	1	0	0	0	0	0	0	0	0	0	0
Fluorene	3100(a)	1	0	0	0	0	0	0	0	0	0	0
Indeno(1,2,3-cd)pyrene	1.6(a)	1	0	0	0	0	0	0	0	0	0	0
2-Hexanone	3900(g)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Methylnaphthalene	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Methyphenol	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Naphthalene	3100(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Nitrophenol	4800(i)	(l)	(l)	0	0	0	0	0	0	0	0	0
N-Nitrosodiphenylamine	240(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Pentachlorophenol	10(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Phenathrene	2,300(f)	1	0	0	0	0	0	0	0	0	0	0
Phenol	47000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,1,1-Trichloroethane	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Pyrene	2300(a)	1	0	0	0	0	0	0	0	0	0	0
Xylenes	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
2,4-D	780(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDD	5(a)	1	0	0	0	0	0	0	0	0	0	0
4,4'DDE	3.5(a)	1	0	0	0	0	0	0	0	0	0	0

Reference Sites: 1607-H2, 1607-H4

Constituent	Cut-off Limit	Number of Sampled Sites	Number of Sites Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Aldrin	0.07(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1248	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1254	0.16(a)	1	0	0	0	0	0	0	0	0	0	0
Aroclor-1260	0.16(a)	1	0	0	0	0	0	0	0	0	0	0
Beta-BHC - Lindane	0.92(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Dieldrin	0.075(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Endrin	23(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
gamma-Chlordane	0.92(a)	1	0	0	0	0	0	0	0	0	0	0
Heptachlor	0.27(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Total TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Total Non-TSCA Hazardous Waste (may include mixed waste)					11,664	10,439	11,063	2,850	1,434	43,888	3,961	85,299
Radionuclide	**(pCi/g)**											
Americium-241	.06(p)	2	1	50	5,832	5,220	5,532	1,425	717	21,944	1,981	42,650
Beryllium-7	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbon-14	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cesium-134	.0388(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cesium-137	3.517(n)	2	0	0	0	0	0	0	0	0	0	0
Chromium-51	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt-58	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt-60	.0147(n)	2	1	50	5,832	5,220	5,532	1,425	717	21,944	1,981	42,650
Europium-152	.04(p)	2	2	100	11,664	10,439	11,063	2,850	1,434	43,888	3,961	85,299
Europium-154	.1151(n)	1	0	0	0	0	0	0	0	0	0	0
Europium-155	.0781(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Gross Alpha	8.4(o)	(l)	(l)	0	0	0	0	0	0	0	0	0
Gross Beta	16(o)	(l)	(l)	0	0	0	0	0	0	0	0	0
Plutonium-238	0.0045(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Plutonium-239/240	.0203(n)	2	1	50	5,832	5,220	5,532	1,425	717	21,944	1,981	42,650
Potassium-40	18.48(n)	2	0	0	0	0	0	0	0	0	0	0

Reference Sites: 1607-H2, 1607-H4

Constituent	Cut-off Limit	Number of Sampled Sites	Number of Sites Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Radium-226	1.037(n)	2	1	50	5,832	5,220	5,532	1,425	717	21,944	1,981	42,650
Sodium-22	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Strontium-90	0.3135(n)	2	1	50	5,832	5,220	5,532	1,425	717	21,944	1,981	42,650
Technetium-99	0(n)	1	0	0	0	0	0	0	0	0	0	0
Thorium-228	2.5(o)	2	0	0	0	0	0	0	0	0	0	0
Thorium-232	1.308(n)	2	1	50	5,832	5,220	5,532	1,425	717	21,944	1,981	42,650
Uranium-233/234	1.366(n)	2	1	50	5,832	5,220	5,532	1,425	717	21,944	1,981	42,650
Uranium-235	.0507(n)	2	1	50	5,832	5,220	5,532	1,425	717	21,944	1,981	42,650
Uranium-238	1.388(n)	2	1	50	5,832	5,220	5,532	1,425	717	21,944	1,981	42,650
Total Radioactive Waste (may include mixed waste)					11,664	10,439	11,063	2,850	1,434	43,888	3,961	85,299

Summary

Total TSCA Mixed Waste	0	0	0	0	0	0	0	0
Total Non-TSCA Mixed Waste	11,664	10,439	11,063	2,850	1,434	43,888	3,961	85,299
Total Mixed Waste	11,664	10,439	11,063	2,850	1,434	43,888	3,961	85,299
Total Non-Radioactive TSCA Hazardous Waste	0	0	0	0	0	0	0	0
Total Non-Radioactive Hazardous Waste (Non-TSCA)	0	0	0	0	0	0	0	0
Total Hazardous Waste (Non-Radioactive)	0	0	0	0	0	0	0	0
Total Radioactive Waste (Non-Hazardous)	0	0	0	0	0	0	0	0

Reference Site: 300 Area Ash Pits

Sub-Project	100-BC	100-DR	100-FR	100-HR	100-KR	100-NR	300-FF	TOTAL
Contaminated Volume (yd3)	0	0	59,713	54,099	186,815	37,580	3,296	341,503

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Inorganic	**(mg/kg)**											
Aluminum	230000(a)	1	0	0	0	0	0	0	0	0	0	0
Antimony	31(a)	1	0	0	0	0	0	0	0	0	0	0
Arsenic	8.92(b)	1	0	0	0	0	0	0	0	0	0	0
Barium	5500(a)	1	0	0	0	0	0	0	0	0	0	0
Beryllium	1.77(b)	1	0	0	0	0	0	0	0	0	0	0
Cadmium	2(c)	1	0	0	0	0	0	0	0	0	0	0
Chromium	100(c)	1	0	0	0	0	0	0	0	0	0	0
Cobalt	(d)	1	0	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Copper	2900(a)	1	0	0	0	0	0	0	0	0	0	0
Iron	(d)	(l)	(l)	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Lead	250(c)	1	0	0	0	0	0	0	0	0	0	0
Magnesium	(d)	(l)	(l)	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Manganese	10,900(e)	1	0	0	0	0	0	0	0	0	0	0
Mercury	1.25(b)	1	0	0	0	0	0	0	0	0	0	0
Nickel	1600(a)	1	0	0	0	0	0	0	0	0	0	0
Potassium	(d)	(l)	(l)	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Selenium	390(a)	1	0	0	0	0	0	0	0	0	0	0
Silver	390(a)	1	0	0	0	0	0	0	0	0	0	0
Sodium	(d)	(l)	(l)	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Sulfate	(d)	(l)	(l)	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Thallium	5.5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Site: 300 Area Ash Pits

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Vanadium	550(a)	1	0	0	0	0	0	0	0	0	0	0
Zinc	23000(a)	1	0	0	0	0	0	0	0	0	0	0
Organic	**(mg/kg)**											
Acetone	7800(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Benzene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Butanone	47000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbondisulfide	7800(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,2-Dichloroethene (total)	700(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Methyl-2-Pentanone	3900(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Methylene Chloride	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Tetrachloroethene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Toluene	40(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Trichloroethene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Vinyl Chloride	0.63(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Acenaphthene	4700(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Anthracene	23000(a)	1	0	0	0	0	0	0	0	0	0	0
Benzo(a)anthracene	1.6(a)	1	0	0	0	0	0	0	0	0	0	0
Benzo(a)pyrene	0.16(a)	1	0	0	0	0	0	0	0	0	0	0
Benzo(b)fluoranthene	1.6(a)	1	0	0	0	0	0	0	0	0	0	0
Benzo(ghi)perylene	2300(f)	1	0	0	0	0	0	0	0	0	0	0
Benzo(k)fluoranthene	1.6(g)	1	0	0	0	0	0	0	0	0	0	0
Benzoic Acid	310000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Bis (2-ethylhexhl) phthalate	85(a)	1	0	0	0	0	0	0	0	0	0	0
Butylbenzylphthalate	16000(a)	1	0	0	0	0	0	0	0	0	0	0
Carbazole	60(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbon Tetracloride	9.2(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Chloro-3-Methylphenol	10(h)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Chlorophenol	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Site: 300 Area Ash Pits

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Chloroform	200(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
4-Chloroaniline	310(a)	1	0	0	0	0	0	0	0	0	0	0
Chrysene	16(g)	1	0	0	0	0	0	0	0	0	0	0
Di-n-octyl-phthalate	1600(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
Di-n-butyl-phthalate	7800(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
Dibenzofuran	2300(f)	1	0	0	0	0	0	0	0	0	0	0
1,3 Dichlorobenzene	7000(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
1,4 Dichlorobenzene	50(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
Diethyl phthalate	63000(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
Ethylbenzene	20(c)	(1)	(1)	0	0	0	0	0	0	0	0	0
Fluoranthene	3100(a)	1	0	0	0	0	0	0	0	0	0	0
Fluorene	3100(a)	1	0	0	0	0	0	0	0	0	0	0
Indeno(1,2,3-cd)pyrene	1.6(a)	1	0	0	0	0	0	0	0	0	0	0
2-Hexanone	3900(g)	(1)	(1)	0	0	0	0	0	0	0	0	0
2-Methylnaphthalene	2300(f)	1	0	0	0	0	0	0	0	0	0	0
4-Methyphenol	390(a)	1	0	0	0	0	0	0	0	0	0	0
Naphthalene	3100(a)	1	0	0	0	0	0	0	0	0	0	0
2-Nitrophenol	4800(i)	(1)	(1)	0	0	0	0	0	0	0	0	0
N-Nitrosodiphenylamine	240(a)	1	0	0	0	0	0	0	0	0	0	0
Pentachlorophenol	10(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
Phenathrene	2,300(f)	1	0	0	0	0	0	0	0	0	0	0
Phenol	47000(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
1,1,1-Trichloroethane	20(c)	(1)	(1)	0	0	0	0	0	0	0	0	0
Pyrene	2300(a)	1	0	0	0	0	0	0	0	0	0	0
Xylenes	20(c)	(1)	(1)	0	0	0	0	0	0	0	0	0
2,4-D	780(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
4,4'DDD	5(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
4,4'DDE	3.5(a)	(1)	(1)	0	0	0	0	0	0	0	0	0

Reference Site: 300 Area Ash Pits

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Aldrin	0.07(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1248	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1254	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1260	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Beta-BHC - Lindane	0.92(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Dieldrin	0.075(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Endrin	23(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
gamma-Chlordane	0.92(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Heptachlor	0.27(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Total TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Total Non-TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Radionuclide	**(pCi/g)**											
Americium-241	.06(p)	(l)	(l)	0	0	0	0	0	0	0	0	0
Beryllium-7	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbon-14	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cesium-134	.0388(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cesium-137	3.517(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Chromium-51	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt-58	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt-60	.0147(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Europium-152	.04(p)	(l)	(l)	0	0	0	0	0	0	0	0	0
Europium-154	.1151(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Europium-155	.0781(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Gross Alpha	8.4(o)	(l)	(l)	0	0	0	0	0	0	0	0	0
Gross Beta	16(o)	(l)	(l)	0	0	0	0	0	0	0	0	0
Plutonium-238	0.0045(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Plutonium-239/240	.0203(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Potassium-40	18.48(n)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Site: 300 Area Ash Pits

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Radium-226	1.037(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Sodium-22	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Strontium-90	0.3135(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Technetium-99	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Thorium-228	2.5(o)	(l)	(l)	0	0	0	0	0	0	0	0	0
Thorium-232	1.308(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Uranium-233/234	1.366(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Uranium-235	.0507(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Uranium-238	1.388(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Total Radioactive Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Summary												
Total TSCA Mixed Waste					0	0	0	0	0	0	0	0
Total Non-TSCA Mixed Waste					0	0	0	0	0	0	0	0
Total Mixed Waste					0	0	0	0	0	0	0	0
Total Non-Radioactive TSCA Hazardous Waste					0	0	0	0	0	0	0	0
Total Non-Radioactive Hazardous Waste (Non-TSCA)					0	0	0	0	0	0	0	0
Total Hazardous Waste (Non-Radioactive)					0	0	0	0	0	0	0	0
Total Radioactive Waste (Non-Hazardous)					0	0	0	0	0	0	0	0

Reference Sites: 316-1, 316-2

Sub-Project	100-BC	100-DR	100-FR	100-HR	100-KR	100-NR	300-FF	TOTAL
Contaminated Volume (yd3)	0	20,359	0	0	0	0	565,985	586,344

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Inorganic	**(mg/kg)**											
Aluminum	230000(a)	32	0	0	0	0	0	0	0	0	0	0
Antimony	31(a)	32	0	0	0	0	0	0	0	0	0	0
Arsenic	8.92(b)	32	1	3	0	636	0	0	0	0	17,687	18,323
Barium	5500(a)	32	0	0	0	0	0	0	0	0	0	0
Beryllium	1.77(b)	32	3	0	0	0	0	0	0	0	0	0
Cadmium	2(c)	32	1	3	0	636	0	0	0	0	17,687	18,323
Chromium	100(c)	32	6	19	0	3,817	0	0	0	0	106,122	109,940
Cobalt	(d)	32	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Copper	2900(a)	32	8	25	0	5,090	0	0	0	0	141,496	146,586
Iron	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Lead	250(c)	32	1	3	0	636	0	0	0	0	17,687	18,323
Magnesium	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Manganese	10,900(e)	32	0	0	0	0	0	0	0	0	0	0
Mercury	1.25(b)	32	6	19	0	3,817	0	0	0	0	106,122	109,940
Nickel	1600(a)	32	1	3	0	636	0	0	0	0	17,687	18,323
Potassium	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Selenium	390(a)	32	0	0	0	0	0	0	0	0	0	0
Silver	390(a)	32	1	3	0	636	0	0	0	0	17,687	18,323
Sodium	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Sulfate	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Thallium	5.5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Sites: 316-1, 316-2

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Vanadium	550(a)	32	0	0	0	0	0	0	0	0	0	0
Zinc	23000(a)	32	0	0	0	0	0	0	0	0	0	0
Organic	**(mg/kg)**											
Acetone	7800(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Benzene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Butanone	47000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbondisulfide	7800(a)	32	0	0	0	0	0	0	0	0	0	0
1,2-Dichloroethene (total)	700(a)	32	0	0	0	0	0	0	0	0	0	0
4-Methyl-2-Pentanone	3900(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Methylene Chloride	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Tetrachloroethene	.5(c)	32	0	0	0	0	0	0	0	0	0	0
Toltiene	40(c)	32	0	0	0	0	0	0	0	0	0	0
Trichloroethene	.5(c)	32	0	0	0	0	0	0	0	0	0	0
Vinyl Chloride	0.63(a)	32	0	0	0	0	0	0	0	0	0	0
Acenaphthene	4700(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Anthracene	23000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Benzo(a)anthracene	1.6(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Benzo(a)pyrene	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Benzo(b)fluoranthene	1.6(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Benzo(ghi)perylene	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
Benzo(k)fluoranthene	1.6(g)	(l)	(l)	0	0	0	0	0	0	0	0	0
Benzoic Acid	310000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Bis (2-ethylhexhl) phthalate	85(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Butylbenzylphthalate	16000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbazole	60(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbon Tetracloride	9.2(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Chloro-3-Methylphenol	10(h)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Chlorophenol	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Sites: 316-1, 316-2

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Chloroform	200(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Chloroaniline	310(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Chrysene	16(g)	(l)	(l)	0	0	0	0	0	0	0	0	0
Di-n-octyl-phthalate	1600(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Di-n-butyl-phthalate	7800(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Dibenzofuran	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,3 Dichlorobenzene	7000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,4 Dichlorobenzene	50(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Diethyl phthalate	63000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Ethylbenzene	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Fluoranthene	3100(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Fluorene	3100(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Indeno(1,2,3-cd)pyrene	1.6(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Hexanone	3900(g)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Methylnaphthalene	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Methyphenol	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Naphthalene	3100(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Nitrophenol	4800(i)	(l)	(l)	0	0	0	0	0	0	0	0	0
N-Nitrosodiphenylamine	240(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Pentachlorophenol	10(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Phenathrene	2,300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
Phenol	47000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,1,1-Trichloroethane	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Pyrene	2300(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Xylenes	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
2,4-D	780(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDD	5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDE	3.5(a)	32	0	0	0	0	0	0	0	0	0	0

Reference Sites: 316-1, 316-2

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Aldrin	0.07(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1248	0.16(a)	32	5	16	0	3,181	0	0	0	0	88,435	91,616
Aroclor-1254	0.16(a)	32	7	22	0	4,454	0	0	0	0	123,809	128,263
Aroclor-1260	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Beta-BHC - Lindane	0.92(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Dieldrin	0.075(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Endrin	23(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
gamma-Chlordane	0.92(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Heptachlor	0.27(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Total TSCA Hazardous Waste (may include mixed waste)					0	5,090	0	0	0	0	141,496	146,586
Total Non-TSCA Hazardous Waste (may include mixed waste)					0	1,272	0	0	0	0	35,374	36,647
Radionuclide	**(pCi/g)**											
Americium-241	.06(p)	(l)	(l)	0	0	0	0	0	0	0	0	0
Beryllium-7	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbon-14	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cesium-134	.0388(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cesium-137	3.517(n)	32	1	3	0	636	0	0	0	0	17,687	18,323
Chromium-51	0(n)	32	0	0	0	0	0	0	0	0	0	0
Cobalt-58	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt-60	.0147(n)	32	32	100	0	20,359	0	0	0	0	565,985	586,344
Europium-152	.04(p)	(l)	(l)	0	0	0	0	0	0	0	0	0
Europium-154	.1151(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Europium-155	.0781(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Gross Alpha	8.4(o)	32	32	100	0	20,359	0	0	0	0	565,985	586,344
Gross Beta	16(o)	32	30	94	0	19,087	0	0	0	0	530,611	549,698
Plutonium-238	0.0045(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Plutonium-239/240	.0203(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Potassium-40	18.48(n)	32	0	0	0	0	0	0	0	0	0	0

Reference Sites: 316-1, 316-2

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Radium-226	1.037(n)	32	2	6	0	1,272	0	0	0	0	35,374	36,647
Sodium-22	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Strontium-90	0.3135(n)	32	12	38	0	7,635	0	0	0	0	212,244	219,879
Technetium-99	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Thorium-228	2.5(o)	32	2	6	0	1,272	0	0	0	0	35,374	36,647
Thorium-232	1.308(n)	32	3	9	0	1,909	0	0	0	0	53,061	54,970
Uranium-233/234	1.366(n)	32	32	100	0	20,359	0	0	0	0	565,985	586,344
Uranium-235	.0507(n)	56	56	100	0	20,359	0	0	0	0	565,985	586,344
Uranium-238	1.388(n)	50	48	96	0	19,545	0	0	0	0	543,346	562,890
Total Radioactive Waste (may include mixed waste)					0	20,359	0	0	0	0	565,985	586,344

Summary

Total TSCA Mixed Waste	0	5,090	0	0	0	0	141,496	146,586
Total Non-TSCA Mixed Waste	0	1,272	0	0	0	0	35,374	36,647
Total Mixed Waste	0	6,362	0	0	0	0	176,870	183,233
Total Non-Radioactive TSCA Hazardous Waste	0	0	0	0	0	0	0	0
Total Non-Radioactive Hazardous Waste (Non-TSCA)	0	0	0	0	0	0	0	0
Total Hazardous Waste (Non-Radioactive)	0	0	0	0	0	0	0	0
Total Radioactive Waste (Non-Hazardous)	0	13,997	0	0	0	0	389,115	403,112

Reference Site: 316-5

Sub-Project	100-BC	100-DR	100-FR	100-HR	100-KR	100-NR	300-FF	TOTAL
Contaminated Volume (yd3)	0	0	0	0	0	0	42,940	42,940

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Inorganic	**(mg/kg)**											
Aluminum	230000(a)	9	0	0	0	0	0	0	0	0	0	0
Antimony	31(a)	9	0	0	0	0	0	0	0	0	0	0
Arsenic	8.92(b)	9	0	0	0	0	0	0	0	0	0	0
Barium	5500(a)	9	0	0	0	0	0	0	0	0	0	0
Beryllium	1.77(b)	9	0	0	0	0	0	0	0	0	0	0
Cadmium	2(c)	9	0	0	0	0	0	0	0	0	0	0
Chromium	100(c)	9	0	0	0	0	0	0	0	0	0	0
Cobalt	(d)	9	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Copper	2900(a)	9	0	0	0	0	0	0	0	0	0	0
Iron	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Lead	250(c)	9	0	0	0	0	0	0	0	0	0	0
Magnesium	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Manganese	10,900(e)	9	0	0	0	0	0	0	0	0	0	0
Mercury	1.25(b)	9	0	0	0	0	0	0	0	0	0	0
Nickel	1600(a)	9	0	0	0	0	0	0	0	0	0	0
Potassium	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Selenium	390(a)	9	0	0	0	0	0	0	0	0	0	0
Silver	390(a)	9	0	0	0	0	0	0	0	0	0	0
Sodium	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Sulfate	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Thallium	5.5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Site: 316-5

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Vanadium	550(a)	9	0	0	0	0	0	0	0	0	0	0
Zinc	23000(a)	9	0	0	0	0	0	0	0	0	0	0
Organic	**(mg/kg)**											
Acetone	7800(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Benzene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Butanone	47000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbondisulfide	7800(a)	9	0	0	0	0	0	0	0	0	0	0
1,2-Dichloroethene (total)	700(a)	9	0	0	0	0	0	0	0	0	0	0
4-Methyl-2-Pentanone	3900(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Methylene Chloride	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Tetrachloroethene	.5(c)	9	0	0	0	0	0	0	0	0	0	0
Toluene	40(c)	9	0	0	0	0	0	0	0	0	0	0
Trichloroethene	.5(c)	9	0	0	0	0	0	0	0	0	0	0
Vinyl Chloride	0.63(a)	9	0	0	0	0	0	0	0	0	0	0
Acenaphthene	4700(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Anthracene	23000(a)	2	0	0	0	0	0	0	0	0	0	0
Benzo(a)anthracene	1.6(a)	2	0	0	0	0	0	0	0	0	0	0
Benzo(a)pyrene	0.16(a)	2	0	0	0	0	0	0	0	0	0	0
Benzo(b)fluoranthene	1.6(a)	2	0	0	0	0	0	0	0	0	0	0
Benzo(ghi)perylene	2300(f)	2	0	0	0	0	0	0	0	0	0	0
Benzo(k)fluoranthene	1.6(g)	2	0	0	0	0	0	0	0	0	0	0
Benzoic Acid	310000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Bis (2-ethylhexhl) phthalate	85(a)	2	0	0	0	0	0	0	0	0	0	0
Butylbenzylphthalate	16000(a)	2	0	0	0	0	0	0	0	0	0	0
Carbazole	60(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbon Tetracloride	9.2(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Chloro-3-Methylphenol	10(h)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Chlorophenol	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Site: 316-5

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Chloroform	200(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Chloroaniline	310(a)	2	0	0	0	0	0	0	0	0	0	0
Chrysene	16(g)	2	0	0	0	0	0	0	0	0	0	0
Di-n-octyl-phthalate	1600(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Di-n-butyl-phthalate	7800(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Dibenzofuran	2300(f)	2	0	0	0	0	0	0	0	0	0	0
1,3 Dichlorobenzene	7000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,4 Dichlorobenzene	50(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Diethyl phthalate	63000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Ethylbenzene	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Fluoranthene	3100(a)	2	0	0	0	0	0	0	0	0	0	0
Fluorene	3100(a)	2	0	0	0	0	0	0	0	0	0	0
Indeno(1,2,3-cd)pyrene	1.6(a)	2	0	0	0	0	0	0	0	0	0	0
2-Hexanone	3900(g)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Methylnaphthalene	2300(f)	2	0	0	0	0	0	0	0	0	0	0
4-Methyphenol	390(a)	2	0	0	0	0	0	0	0	0	0	0
Naphthalene	3100(a)	2	0	0	0	0	0	0	0	0	0	0
2-Nitrophenol	4800(i)	(l)	(l)	0	0	0	0	0	0	0	0	0
N-Nitrosodiphenylamine	240(a)	2	0	0	0	0	0	0	0	0	0	0
Pentachlorophenol	10(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Phenathrene	2,300(f)	2	0	0	0	0	0	0	0	0	0	0
Phenol	47000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,1,1-Trichloroethane	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Pyrene	2300(a)	2	0	0	0	0	0	0	0	0	0	0
Xylenes	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
2,4-D	780(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDD	5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDE	3.5(a)	9	0	0	0	0	0	0	0	0	0	0

Reference Site: 316-5

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Aldrin	0.07(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1248	0.16(a)	9	0	0	0	0	0	0	0	0	0	0
Aroclor-1254	0.16(a)	9	0	0	0	0	0	0	0	0	0	0
Aroclor-1260	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Beta-BHC - Lindane	0.92(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Dieldrin	0.075(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Endrin	23(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
gamma-Chlordane	0.92(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Heptachlor	0.27(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Total TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Total Non-TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Radionuclide	**(pCi/g)**											
Americium-241	.06(p)	(l)	(l)	0	0	0	0	0	0	0	0	0
Beryllium-7	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbon-14	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cesium-134	.0388(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cesium-137	3.517(n)	9	0	0	0	0	0	0	0	0	0	0
Chromium-51	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt-58	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt-60	.0147(n)	9	2	22	0	0	0	0	0	0	9,542	9,542
Europium-152	.04(p)	(l)	(l)	0	0	0	0	0	0	0	0	0
Europium-154	.1151(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Europium-155	.0781(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Gross Alpha	8.4(o)	9	8	89	0	0	0	0	0	0	38,169	38,169
Gross Beta	16(o)	9	8	89	0	0	0	0	0	0	38,169	38,169
Plutonium-238	0.0045(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Plutonium-239/240	.0203(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Potassium-40	18.48(n)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Site: 316-5

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Radium-226	1.037(n)	9	2	22	0	0	0	0	0	0	9,542	9,542
Sodium-22	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Strontium-90	0.3135(n)	9	2	22	0	0	0	0	0	0	9,542	9,542
Technetium-99	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Thorium-228	2.5(o)	9	0	0	0	0	0	0	0	0	0	0
Thorium-232	1.308(n)	9	0	0	0	0	0	0	0	0	0	0
Uranium-233/234	1.366(n)	9	9	100	0	0	0	0	0	0	42,940	42,940
Uranium-235	.0507(n)	9	9	100	0	0	0	0	0	0	42,940	42,940
Uranium-238	1.388(n)	9	9	100	0	0	0	0	0	0	42,940	42,940
Total Radioactive Waste (may include mixed waste)					0	0	0	0	0	0	42,940	42,940

Summary

Total TSCA Mixed Waste	0	0	0	0	0	0	0	0
Total Non-TSCA Mixed Waste	0	0	0	0	0	0	0	0
Total Mixed Waste	0	0	0	0	0	0	0	0
Total Non-Radioactive TSCA Hazardous Waste	0	0	0	0	0	0	0	0
Total Non-Radioactive Hazardous Waste (Non-TSCA)	0	0	0	0	0	0	0	0
Total Hazardous Waste (Non-Radioactive)	0	0	0	0	0	0	0	0
Total Radioactive Waste (Non-Hazardous)	0	0	0	0	0	0	42,940	42,940

Reference Site: Filter Backwash Ponds

Sub-Project	100-BC	100-DR	100-FR	100-HR	100-KR	100-NR	300-FF	TOTAL
Contaminated Volume (yd3)	0	0	0	0	0	0	0	0

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Inorganic	**(mg/kg)**											
Aluminum	230000(a)	1	0	0	0	0	0	0	0	0	0	0
Antimony	31(a)	1	0	0	0	0	0	0	0	0	0	0
Arsenic	8.92(b)	1	1	100	0	0	0	0	0	0	0	0
Barium	5500(a)	1	0	0	0	0	0	0	0	0	0	0
Beryllium	1.77(b)	1	0	0	0	0	0	0	0	0	0	0
Cadmium	2(c)	1	0	0	0	0	0	0	0	0	0	0
Chromium	100(c)	1	0	0	0	0	0	0	0	0	0	0
Cobalt	(d)	1	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Copper	2900(a)	1	0	0	0	0	0	0	0	0	0	0
Iron	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Lead	250(c)	1	0	0	0	0	0	0	0	0	0	0
Magnesium	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Manganese	10,900(e)	1	0	0	0	0	0	0	0	0	0	0
Mercury	1.25(b)	1	0	0	0	0	0	0	0	0	0	0
Nickel	1600(a)	1	0	0	0	0	0	0	0	0	0	0
Potassium	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Selenium	390(a)	1	0	0	0	0	0	0	0	0	0	0
Silver	390(a)	1	0	0	0	0	0	0	0	0	0	0
Sodium	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Sulfate	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Thallium	5.5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Site: Filter Backwash Ponds

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Vanadium	550(a)	1	0	0	0	0	0	0	0	0	0	0
Zinc	23000(a)	1	0	0	0	0	0	0	0	0	0	0
Organic	**(mg/kg)**											
Acetone	7800(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
Benzene	.5(c)	(1)	(1)	0	0	0	0	0	0	0	0	0
2-Butanone	47000(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
Carbondisulfide	7800(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
1,2-Dichloroethene (total)	700(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
4-Methyl-2-Pentanone	3900(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
Methylene Chloride	.5(c)	(1)	(1)	0	0	0	0	0	0	0	0	0
Tetrachloroethene	.5(c)	(1)	(1)	0	0	0	0	0	0	0	0	0
Toluene	40(c)	(1)	(1)	0	0	0	0	0	0	0	0	0
Trichloroethene	.5(c)	(1)	(1)	0	0	0	0	0	0	0	0	0
Vinyl Chloride	0.63(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
Acenaphthene	4700(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
Anthracene	23000(a)	1	0	0	0	0	0	0	0	0	0	0
Benzo(a)anthracene	1.6(a)	1	0	0	0	0	0	0	0	0	0	0
Benzo(a)pyrene	0.16(a)	1	1	100	0	0	0	0	0	0	0	0
Benzo(b)fluoranthene	1.6(a)	1	0	0	0	0	0	0	0	0	0	0
Benzo(ghi)perylene	2300(f)	1	0	0	0	0	0	0	0	0	0	0
Benzo(k)fluoranthene	1.6(g)	1	0	0	0	0	0	0	0	0	0	0
Benzoic Acid	310000(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
Bis (2-ethylhexhl) phthalate	85(a)	1	0	0	0	0	0	0	0	0	0	0
Butylbenzylphthalate	16000(a)	1	0	0	0	0	0	0	0	0	0	0
Carbazole	60(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
Carbon Tetracloride	9.2(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
4-Chloro-3-Methylphenol	10(h)	(1)	(1)	0	0	0	0	0	0	0	0	0
2-Chlorophenol	390(a)	(1)	(1)	0	0	0	0	0	0	0	0	0

Reference Site: Filter Backwash Ponds

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Chloroform	200(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Chloroaniline	310(a)	1	0	0	0	0	0	0	0	0	0	0
Chrysene	16(g)	1	0	0	0	0	0	0	0	0	0	0
Di-n-octyl-phthalate	1600(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Di-n-butyl-phthalate	7800(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Dibenzofuran	2300(f)	1	0	0	0	0	0	0	0	0	0	0
1,3 Dichlorobenzene	7000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,4 Dichlorobenzene	50(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Diethyl phthalate	63000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Ethylbenzene	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Fluoranthene	3100(a)	1	0	0	0	0	0	0	0	0	0	0
Fluorene	3100(a)	1	0	0	0	0	0	0	0	0	0	0
Indeno(1,2,3-cd)pyrene	1.6(a)	1	0	0	0	0	0	0	0	0	0	0
2-Hexanone	3900(g)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Methylnaphthalene	2300(f)	1	0	0	0	0	0	0	0	0	0	0
4-Methyphenol	390(a)	1	0	0	0	0	0	0	0	0	0	0
Naphthalene	3100(a)	1	0	0	0	0	0	0	0	0	0	0
2-Nitrophenol	4800(i)	(l)	(l)	0	0	0	0	0	0	0	0	0
N-Nitrosodiphenylamine	240(a)	1	0	0	0	0	0	0	0	0	0	0
Pentachlorophenol	10(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Phenathrene	2,300(f)	1	0	0	0	0	0	0	0	0	0	0
Phenol	47000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,1,1-Trichloroethane	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Pyrene	2300(a)	1	0	0	0	0	0	0	0	0	0	0
Xylenes	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
2,4-D	780(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDD	5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDE	3.5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Site: Filter Backwash Ponds

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Aldrin	0.07(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1248	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1254	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1260	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Beta-BHC - Lindane	0.92(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Dieldrin	0.075(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Endrin	23(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
gamma-Chlordane	0.92(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Heptachlor	0.27(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Total TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Total Non-TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Radionuclide	**(pCi/g)**											
Americium-241	.06(p)	(l)	(l)	0	0	0	0	0	0	0	0	0
Beryllium-7	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbon-14	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cesium-134	.0388(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cesium-137	3.517(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Chromium-51	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt-58	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt-60	.0147(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Europium-152	.04(p)	(l)	(l)	0	0	0	0	0	0	0	0	0
Europium-154	.1151(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Europium-155	.0781(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Gross Alpha	8.4(o)	(l)	(l)	0	0	0	0	0	0	0	0	0
Gross Beta	16(o)	(l)	(l)	0	0	0	0	0	0	0	0	0
Plutonium-238	0.0045(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Plutonium-239/240	.0203(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Potassium-40	18.48(n)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Site: Filter Backwash Ponds

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Radium-226	1.037(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Sodium-22	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Strontium-90	0.3135(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Technetium-99	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Thorium-228	2.5(o)	(l)	(l)	0	0	0	0	0	0	0	0	0
Thorium-232	1.308(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Uranium-233/234	1.366(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Uranium-235	.0507(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Uranium-238	1.388(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Total Radioactive Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Summary												
Total TSCA Mixed Waste					0	0	0	0	0	0	0	0
Total Non-TSCA Mixed Waste					0	0	0	0	0	0	0	0
Total Mixed Waste					0	0	0	0	0	0	0	0
Total Non-Radioactive TSCA Hazardous Waste					0	0	0	0	0	0	0	0
Total Non-Radioactive Hazardous Waste (Non-TSCA)					0	0	0	0	0	0	0	0
Total Hazardous Waste (Non-Radioactive)					0	0	0	0	0	0	0	0
Total Radioactive Waste (Non-Hazardous)					0	0	0	0	0	0	0	0

Reference Site: Sanitary Sewer System

Sub-Project	100-BC	100-DR	100-FR	100-HR	100-KR	100-NR	300-FF	TOTAL
Contaminated Volume (yd3)	0	0	0	0	0	0	62,142	62,142

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Inorganic	**(mg/kg)**											
Aluminum	230000(a)	1	0	0	0	0	0	0	0	0	0	0
Antimony	31(a)	1	0	0	0	0	0	0	0	0	0	0
Arsenic	8.92(b)	1	0	0	0	0	0	0	0	0	0	0
Barium	5500(a)	1	0	0	0	0	0	0	0	0	0	0
Beryllium	1.77(b)	1	0	0	0	0	0	0	0	0	0	0
Cadmium	2(c)	1	1	100	0	0	0	0	0	0	62,142	62,142
Chromium	100(c)	1	1	100	0	0	0	0	0	0	62,142	62,142
Cobalt	(d)	1	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Copper	2900(a)	1	0	0	0	0	0	0	0	0	0	0
Iron	(d)	(l)	1	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Lead	250(c)	1	1	100	0	0	0	0	0	0	62,142	62,142
Magnesium	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Manganese	10,900(e)	1	0	0	0	0	0	0	0	0	0	0
Mercury	1.25(b)	1	1	100	0	0	0	0	0	0	62,142	62,142
Nickel	1600(a)	1	0	0	0	0	0	0	0	0	0	0
Potassium	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Selenium	390(a)	1	0	0	0	0	0	0	0	0	0	0
Silver	390(a)	1	0	0	0	0	0	0	0	0	0	0
Sodium	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Sulfate	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Thallium	5.5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Site: Sanitary Sewer System

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Vanadium	550(a)	1	0	0	0	0	0	0	0	0	0	0
Zinc	23000(a)	1	0	0	0	0	0	0	0	0	0	0
Organic	**(mg/kg)**											
Acetone	7800(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Benzene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Butanone	47000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbondisulfide	7800(a)	1	0	0	0	0	0	0	0	0	0	0
1,2-Dichloroethene (total)	700(a)	1	0	0	0	0	0	0	0	0	0	0
4-Methyl-2-Pentanone	3900(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Methylene Chloride	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Tetrachloroethene	.5(c)	1	0	0	0	0	0	0	0	0	0	0
Toluene	40(c)	1	0	0	0	0	0	0	0	0	0	0
Trichloroethene	.5(c)	1	0	0	0	0	0	0	0	0	0	0
Vinyl Chloride	0.63(a)	1	0	0	0	0	0	0	0	0	0	0
Acenaphthene	4700(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Anthracene	23000(a)	1	0	0	0	0	0	0	0	0	0	0
Benzo(a)anthracene	1.6(a)	1	0	0	0	0	0	0	0	0	0	0
Benzo(a)pyrene	0.16(a)	1	0	0	0	0	0	0	0	0	0	0
Benzo(b)fluoranthene	1.6(a)	1	0	0	0	0	0	0	0	0	0	0
Benzo(ghi)perylene	2300(f)	1	0	0	0	0	0	0	0	0	0	0
Benzo(k)fluoranthene	1.6(g)	1	0	0	0	0	0	0	0	0	0	0
Benzoic Acid	310000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Bis (2-ethylhexhl) phthalate	85(a)	1	0	0	0	0	0	0	0	0	0	0
Butylbenzylphthalate	16000(a)	1	0	0	0	0	0	0	0	0	0	0
Carbazole	60(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbon Tetracloride	9.2(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Chloro-3-Methylphenol	10(h)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Chlorophenol	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Site: Sanitary Sewer System

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Chloroform	200(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
4-Chloroaniline	310(a)	1	0	0	0	0	0	0	0	0	0	0
Chrysene	16(g)	1	0	0	0	0	0	0	0	0	0	0
Di-n-octyl-phthalate	1600(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
Di-n-butyl-phthalate	7800(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
Dibenzofuran	2300(f)	1	0	0	0	0	0	0	0	0	0	0
1,3 Dichlorobenzene	7000(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
1,4 Dichlorobenzene	50(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
Diethyl phthalate	63000(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
Ethylbenzene	20(c)	(1)	(1)	0	0	0	0	0	0	0	0	0
Fluoranthene	3100(a)	1	0	0	0	0	0	0	0	0	0	0
Fluorene	3100(a)	1	0	0	0	0	0	0	0	0	0	0
Indeno(1,2,3-cd)pyrene	1.6(a)	1	0	0	0	0	0	0	0	0	0	0
2-Hexanone	3900(g)	(1)	(1)	0	0	0	0	0	0	0	0	0
2-Methylnaphthalene	2300(f)	1	0	0	0	0	0	0	0	0	0	0
4-Methyphenol	390(a)	1	0	0	0	0	0	0	0	0	0	0
Naphthalene	3100(a)	1	0	0	0	0	0	0	0	0	0	0
2-Nitrophenol	4800(i)	(1)	(1)	0	0	0	0	0	0	0	0	0
N-Nitrosodiphenylamine	240(a)	1	0	0	0	0	0	0	0	0	0	0
Pentachlorophenol	10(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
Phenathrene	2,300(f)	1	0	0	0	0	0	0	0	0	0	0
Phenol	47000(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
1,1,1-Trichloroethane	20(c)	(1)	(1)	0	0	0	0	0	0	0	0	0
Pyrene	2300(a)	1	0	0	0	0	0	0	0	0	0	0
Xylenes	20(c)	(1)	(1)	0	0	0	0	0	0	0	0	0
2,4-D	780(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
4,4'DDD	5(a)	(1)	(1)	0	0	0	0	0	0	0	0	0
4,4'DDE	3.5(a)	1	0	0	0	0	0	0	0	0	0	0

Reference Site: Sanitary Sewer System

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Aldrin	0.07(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1248	0.16(a)	1	0	0	0	0	0	0	0	0	0	0
Aroclor-1254	0.16(a)	1	0	0	0	0	0	0	0	0	0	0
Aroclor-1260	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Beta-BHC - Lindane	0.92(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Dieldrin	0.075(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Endrin	23(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
gamma-Chlordane	0.92(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Heptachlor	0.27(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Total TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Total Non-TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	62,142	62,142
Radionuclide	**(pCi/g)**											
Americium-241	.06(p)	(l)	(l)	0	0	0	0	0	0	0	0	0
Beryllium-7	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbon-14	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cesium-134	.0388(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cesium-137	3.517(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Chromium-51	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt-58	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt-60	.0147(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Europium-152	.04(p)	(l)	(l)	0	0	0	0	0	0	0	0	0
Europium-154	.1151(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Europium-155	.0781(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Gross Alpha	8.4(o)	(l)	(l)	0	0	0	0	0	0	0	0	0
Gross Beta	16(o)	(l)	(l)	0	0	0	0	0	0	0	0	0
Plutonium-238	0.0045(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Plutonium-239/240	.0203(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Potassium-40	18.48(n)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Site: Sanitary Sewer System

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Radium-226	1.037(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Sodium-22	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Strontium-90	0.3135(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Technetium-99	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Thorium-228	2.5(o)	(l)	(l)	0	0	0	0	0	0	0	0	0
Thorium-232	1.308(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Uranium-233/234	1.366(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Uranium-235	.0507(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Uranium-238	1.388(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Total Radioactive Waste (may include mixed waste)					0	0	0	0	0	0	0	0

Summary

Total TSCA Mixed Waste	0	0	0	0	0	0	0	0
Total Non-TSCA Mixed Waste	0	0	0	0	0	0	0	0
Total Mixed Waste	0	0	0	0	0	0	0	0
Total Non-Radioactive TSCA Hazardous Waste	0	0	0	0	0	0	0	0
Total Non-Radioactive Hazardous Waste (Non-TSCA)	0	0	0	0	0	0	62,142	62,142
Total Hazardous Waste (Non-Radioactive)	0	0	0	0	0	0	62,142	62,142
Total Radioactive Waste (Non-Hazardous)	0	0	0	0	0	0	0	0

Reference Site: Sodium Dichromate Tanks

Sub-Project	100-BC	100-DR	100-FR	100-HR	100-KR	100-NR	300-FF	TOTAL
Contaminated Volume (yd3)	0	167	0	0	194	0	0	361

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Inorganic	**(mg/kg)**											
Aluminum	230000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Antimony	31(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Arsenic	8.92(b)	(l)	(l)	0	0	0	0	0	0	0	0	0
Barium	5500(a)	1	0	0	0	0	0	0	0	0	0	0
Beryllium	1.77(b)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cadmium	2(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Chromium	100(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Copper	2900(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Iron	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Lead	250(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Magnesium	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Manganese	10,900(e)	(l)	(l)	0	0	0	0	0	0	0	0	0
Mercury	1.25(b)	(l)	(l)	0	0	0	0	0	0	0	0	0
Nickel	1600(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Potassium	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Selenium	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Silver	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Sodium	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Sulfate	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Thallium	5.5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Site: Sodium Dichromate Tanks

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Vanadium	550(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Zinc	23000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Organic	**(mg/kg)**											
Acetone	7800(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Benzene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Butanone	47000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbondisulfide	7800(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,2-Dichloroethene (total)	700(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Methyl-2-Pentanone	3900(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Methylene Chloride	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Tetrachloroethene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Toluene	40(c)	1	0	0	0	0	0	0	0	0	0	0
Trichloroethene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Vinyl Chloride	0.63(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Acenaphthene	4700(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Anthracene	23000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Benzo(a)anthracene	1.6(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Benzo(a)pyrene	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Benzo(b)fluoranthene	1.6(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Benzo(ghi)perylene	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
Benzo(k)fluoranthene	1.6(g)	(l)	(l)	0	0	0	0	0	0	0	0	0
Benzoic Acid	310000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Bis (2-ethylhexhl) phthalate	85(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Butylbenzylphthalate	16000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbazole	60(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbon Tetracloride	9.2(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Chloro-3-Methylphenol	10(h)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Chlorophenol	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Site: Sodium Dichromate Tanks

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Chloroform	200(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Chloroaniline	310(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Chrysene	16(g)	(l)	(l)	0	0	0	0	0	0	0	0	0
Di-n-octyl-phthalate	1600(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Di-n-butyl-phthalate	7800(a)	1	0	0	0	0	0	0	0	0	0	0
Dibenzofuran	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,3 Dichlorobenzene	7000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,4 Dichlorobenzene	50(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Diethyl phthalate	63000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Ethylbenzene	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Fluoranthene	3100(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Fluorene	3100(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Indeno(1,2,3-cd)pyrene	1.6(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Hexanone	3900(g)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Methylnaphthalene	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Methyphenol	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Naphthalene	3100(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Nitrophenol	4800(i)	(l)	(l)	0	0	0	0	0	0	0	0	0
N-Nitrosodiphenylamine	240(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Pentachlorophenol	10(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Phenathrene	2,300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
Phenol	47000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,1,1-Trichloroethane	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Pyrene	2300(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Xylenes	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
2,4-D	780(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDD	5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDE	3.5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Site: Sodium Dichromate Tanks

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Aldrin	0.07(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1248	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1254	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1260	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Beta-BHC - Lindane	0.92(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Dieldrin	0.075(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Endrin	23(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
gamma-Chlordane	0.92(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Heptachlor	0.27(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Total TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Total Non-TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Radionuclide	**(pCi/g)**											
Americium-241	.06(p)	(l)	(l)	0	0	0	0	0	0	0	0	0
Beryllium-7	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbon-14	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cesium-134	.0388(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cesium-137	3.517(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Chromium-51	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt-58	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt-60	.0147(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Europium-152	.04(p)	(l)	(l)	0	0	0	0	0	0	0	0	0
Europium-154	.1151(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Europium-155	.0781(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Gross Alpha	8.4(o)	(l)	(l)	0	0	0	0	0	0	0	0	0
Gross Beta	16(o)	(l)	(l)	0	0	0	0	0	0	0	0	0
Plutonium-238	0.0045(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Plutonium-239/240	.0203(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Potassium-40	18.48(n)	2	0	0	0	0	0	0	0	0	0	0

Reference Site: Sodium Dichromate Tanks

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Radium-226	1.037(n)	1	0	0	0	0	0	0	0	0	0	0
Sodium-22	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Strontium-90	0.3135(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Technetium-99	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Thorium-228	2.5(o)	1	0	0	0	0	0	0	0	0	0	0
Thorium-232	1.308(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Uranium-233/234	1.366(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Uranium-235	.0507(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Uranium-238	1.388(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Total Radioactive Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Summary												
Total TSCA Mixed Waste					0	0	0	0	0	0	0	0
Total Non-TSCA Mixed Waste					0	0	0	0	0	0	0	0
Total Mixed Waste					0	0	0	0	0	0	0	0
Total Non-Radioactive TSCA Hazardous Waste					0	0	0	0	0	0	0	0
Total Non-Radioactive Hazardous Waste (Non-TSCA)					0	0	0	0	0	0	0	0
Total Hazardous Waste (Non-Radioactive)					0	0	0	0	0	0	0	0
Total Radioactive Waste (Non-Hazardous)					0	0	0	0	0	0	0	0

Reference Site: UPR-100-N-17

Sub-Project	100-BC	100-DR	100-FR	100-HR	100-KR	100-NR	300-FF	TOTAL
Contaminated Volume (yd3)	0	0	0	0	506	853	252	1,611

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Inorganic	**(mg/kg)**											
Aluminum	230000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Antimony	31(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Arsenic	8.92(b)	(l)	(l)	0	0	0	0	0	0	0	0	0
Barium	5500(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Beryllium	1.77(b)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cadmium	2(c)	1	0	0	0	0	0	0	0	0	0	0
Chromium	100(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt	(d)	(l)	(l)	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Copper	2900(a)	1	0	0	0	0	0	0	0	0	0	0
Iron	(d)	(l)	(l)	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Lead	250(c)	1	0	0	0	0	0	0	0	0	0	0
Magnesium	(d)	(l)	(l)	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Manganese	10,900(e)	1	0	0	0	0	0	0	0	0	0	0
Mercury	1.25(b)	(l)	(l)	0	0	0	0	0	0	0	0	0
Nickel	1600(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Potassium	(d)	(l)	(l)	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Selenium	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Silver	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Sodium	(d)	(l)	(l)	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Sulfate	(d)	(l)	(l)	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Thallium	5.5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Site: UPR-100-N-17

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Vanadium	550(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Zinc	23000(a)	1	0	0	0	0	0	0	0	0	0	0
Organic	**(mg/kg)**											
Acetone	7800(a)	1	0	0	0	0	0	0	0	0	0	0
Benzene	.5(c)	1	0	0	0	0	0	0	0	0	0	0
2-Butanone	47000(a)	1	0	0	0	0	0	0	0	0	0	0
Carbondisulfide	7800(a)	1	0	0	0	0	0	0	0	0	0	0
1,2-Dichloroethene (total)	700(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Methyl-2-Pentanone	3900(a)	1	0	0	0	0	0	0	0	0	0	0
Methylene Chloride	.5(c)	1	0	0	0	0	0	0	0	0	0	0
Tetrachloroethene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Toluene	40(c)	1	0	0	0	0	0	0	0	0	0	0
Trichloroethene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Vinyl Chloride	0.63(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Acenaphthene	4700(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Anthracene	23000(a)	1	0	0	0	0	0	0	0	0	0	0
Benzo(a)anthracene	1.6(a)	1	0	0	0	0	0	0	0	0	0	0
Benzo(a)pyrene	0.16(a)	1	0	0	0	0	0	0	0	0	0	0
Benzo(b)fluoranthene	1.6(a)	1	0	0	0	0	0	0	0	0	0	0
Benzo(ghi)perylene	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
Benzo(k)fluoranthene	1.6(g)	(l)	(l)	0	0	0	0	0	0	0	0	0
Benzoic Acid	310000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Bis (2-ethylhexhl) phthalate	85(a)	1	0	0	0	0	0	0	0	0	0	0
Butylbenzylphthalate	16000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbazole	60(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbon Tetracloride	9.2(a)	1	0	0	0	0	0	0	0	0	0	0
4-Chloro-3-Methylphenol	10(h)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Chlorophenol	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Site: UPR-100-N-17

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Chloroform	200(a)	1	0	0	0	0	0	0	0	0	0	0
4-Chloroaniline	310(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Chrysene	16(g)	1	0	0	0	0	0	0	0	0	0	0
Di-n-octyl-phthalate	1600(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Di-n-butyl-phthalate	7800(a)	1	0	0	0	0	0	0	0	0	0	0
Dibenzofuran	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,3 Dichlorobenzene	7000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,4 Dichlorobenzene	50(a)	1	0	0	0	0	0	0	0	0	0	0
Diethyl phthalate	63000(a)	1	0	0	0	0	0	0	0	0	0	0
Ethylbenzene	20(c)	1	0	0	0	0	0	0	0	0	0	0
Fluoranthene	3100(a)	1	0	0	0	0	0	0	0	0	0	0
Fluorene	3100(a)	1	0	0	0	0	0	0	0	0	0	0
Indeno(1,2,3-cd)pyrene	1.6(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Hexanone	3900(g)	1	0	0	0	0	0	0	0	0	0	0
2-Methylnaphthalene	2300(f)	1	0	0	0	0	0	0	0	0	0	0
4-Methyphenol	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Naphthalene	3100(a)	1	0	0	0	0	0	0	0	0	0	0
2-Nitrophenol	4800(i)	(l)	(l)	0	0	0	0	0	0	0	0	0
N-Nitrosodiphenylamine	240(a)	1	0	0	0	0	0	0	0	0	0	0
Pentachlorophenol	10(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Phenathrene	2,300(f)	1	0	0	0	0	0	0	0	0	0	0
Phenol	47000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,1,1-Trichloroethane	20(c)	1	0	0	0	0	0	0	0	0	0	0
Pyrene	2300(a)	1	0	0	0	0	0	0	0	0	0	0
Xylenes	20(c)	1	0	0	0	0	0	0	0	0	0	0
2,4-D	780(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDD	5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDE	3.5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Site: UPR-100-N-17

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Aldrin	0.07(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1248	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1254	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1260	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Beta-BHC - Lindane	0.92(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Dieldrin	0.075(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Endrin	23(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
gamma-Chlordane	0.92(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Heptachlor	0.27(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Total TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Total Non-TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Radionuclide	**(pCi/g)**											
Americium-241	.06(p)	1	0	0	0	0	0	0	0	0	0	0
Beryllium-7	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbon-14	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cesium-134	.0388(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cesium-137	3.517(n)	1	0	0	0	0	0	0	0	0	0	0
Chromium-51	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt-58	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt-60	.0147(n)	1	1	100	0	0	0	0	506	853	252	1,611
Europium-152	.04(p)	(l)	(l)	0	0	0	0	0	0	0	0	0
Europium-154	.1151(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Europium-155	.0781(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Gross Alpha	8.4(o)	1	0	0	0	0	0	0	0	0	0	0
Gross Beta	16(o)	1	1	100	0	0	0	0	506	853	252	1,611
Plutonium-238	0.0045(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Plutonium-239/240	.0203(n)	1	0	0	0	0	0	0	0	0	0	0
Potassium-40	18.48(n)	1	0	0	0	0	0	0	0	0	0	0

Reference Site: UPR-100-N-17

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Radium-226	1.037(n)	1	0	0	0	0	0	0	0	0	0	0
Sodium-22	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Strontium-90	0.3135(n)	1	1	100	0	0	0	0	506	853	252	1,611
Technetium-99	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Thorium-228	2.5(o)	1	0	0	0	0	0	0	0	0	0	0
Thorium-232	1.308(n)	1	0	0	0	0	0	0	0	0	0	0
Uranium-233/234	1.366(n)	1	0	0	0	0	0	0	0	0	0	0
Uranium-235	.0507(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Uranium-238	1.388(n)	1	0	0	0	0	0	0	0	0	0	0
Total Radioactive Waste (may include mixed waste)					0	0	0	0	506	853	252	1,611
Summary												
Total TSCA Mixed Waste					0	0	0	0	0	0	0	0
Total Non-TSCA Mixed Waste					0	0	0	0	0	0	0	0
Total Mixed Waste					0	0	0	0	0	0	0	0
Total Non-Radioactive TSCA Hazardous Waste					0	0	0	0	0	0	0	0
Total Non-Radioactive Hazardous Waste (Non-TSCA)					0	0	0	0	0	0	0	0
Total Hazardous Waste (Non-Radioactive)					0	0	0	0	0	0	0	0
Total Radioactive Waste (Non-Hazardous)					0	0	0	0	506	853	252	1,611

Reference Sites: UPR-100-N-4, UPR-100-N-8

Sub-Project	100-BC	100-DR	100-FR	100-HR	100-KR	100-NR	300-FF	TOTAL
Contaminated Volume (yd3)	0	0	0	0	0	436	0	436

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Inorganic	**(mg/kg)**											
Aluminum	230000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Antimony	31(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Arsenic	8.92(b)	(l)	(l)	0	0	0	0	0	0	0	0	0
Barium	5500(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Beryllium	1.77(b)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cadmium	2(c)	3	0	0	0	0	0	0	0	0	0	0
Chromium	100(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt	(d)	(l)	(l)	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Copper	2900(a)	3	0	0	0	0	0	0	0	0	0	0
Iron	(d)	(l)	(l)	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Lead	250(c)	3	0	0	0	0	0	0	0	0	0	0
Magnesium	(d)	(l)	(l)	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Manganese	10,900(e)	3	0	0	0	0	0	0	0	0	0	0
Mercury	1.25(b)	(l)	(l)	0	0	0	0	0	0	0	0	0
Nickel	1600(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Potassium	(d)	(l)	(l)	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Selenium	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Silver	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Sodium	(d)	(l)	(l)	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Sulfate	(d)	(l)	(l)	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Thallium	5.5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Sites: UPR-100-N-4, UPR-100-N-8

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Vanadium	550(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Zinc	23000(a)	3	0	0	0	0	0	0	0	0	0	0
Organic	**(mg/kg)**											
Acetone	7800(a)	2	0	0	0	0	0	0	0	0	0	0
Benzene	.5(c)	2	0	0	0	0	0	0	0	0	0	0
2-Butanone	47000(a)	2	0	0	0	0	0	0	0	0	0	0
Carbondisulfide	7800(a)	2	0	0	0	0	0	0	0	0	0	0
1,2-Dichloroethene (total)	700(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Methyl-2-Pentanone	3900(a)	2	0	0	0	0	0	0	0	0	0	0
Methylene Chloride	.5(c)	2	0	0	0	0	0	0	0	0	0	0
Tetrachloroethene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Toluene	40(c)	2	0	0	0	0	0	0	0	0	0	0
Trichloroethene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Vinyl Chloride	0.63(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Acenaphthene	4700(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Anthracene	23000(a)	3	0	0	0	0	0	0	0	0	0	0
Benzo(a)anthracene	1.6(a)	3	0	0	0	0	0	0	0	0	0	0
Benzo(a)pyrene	0.16(a)	3	0	0	0	0	0	0	0	0	0	0
Benzo(b)fluoranthene	1.6(a)	3	0	0	0	0	0	0	0	0	0	0
Benzo(ghi)perylene	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
Benzo(k)fluoranthene	1.6(g)	(l)	(l)	0	0	0	0	0	0	0	0	0
Benzoic Acid	310000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Bis (2-ethylhexhl) phthalate	85(a)	3	0	0	0	0	0	0	0	0	0	0
Butylbenzylphthalate	16000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbazole	60(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbon Tetracloride	9.2(a)	2	0	0	0	0	0	0	0	0	0	0
4-Chloro-3-Methylphenol	10(h)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Chlorophenol	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Sites: UPR-100-N-4, UPR-100-N-8

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Chloroform	200(a)	2	0	0	0	0	0	0	0	0	0	0
4-Chloroaniline	310(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Chrysene	16(g)	3	0	0	0	0	0	0	0	0	0	0
Di-n-octyl-phthalate	1600(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Di-n-butyl-phthalate	7800(a)	3	0	0	0	0	0	0	0	0	0	0
Dibenzofuran	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,3 Dichlorobenzene	7000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,4 Dichlorobenzene	50(a)	3	0	0	0	0	0	0	0	0	0	0
Diethyl phthalate	63000(a)	3	0	0	0	0	0	0	0	0	0	0
Ethylbenzene	20(c)	2	0	0	0	0	0	0	0	0	0	0
Fluoranthene	3100(a)	3	0	0	0	0	0	0	0	0	0	0
Fluorene	3100(a)	3	0	0	0	0	0	0	0	0	0	0
Indeno(1,2,3-cd)pyrene	1.6(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Hexanone	3900(g)	2	0	0	0	0	0	0	0	0	0	0
2-Methylnaphthalene	2300(f)	3	0	0	0	0	0	0	0	0	0	0
4-Methyphenol	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Naphthalene	3100(a)	3	0	0	0	0	0	0	0	0	0	0
2-Nitrophenol	4800(i)	(l)	(l)	0	0	0	0	0	0	0	0	0
N-Nitrosodiphenylamine	240(a)	3	0	0	0	0	0	0	0	0	0	0
Pentachlorophenol	10(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Phenathrene	2,300(f)	3	0	0	0	0	0	0	0	0	0	0
Phenol	47000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,1,1-Trichloroethane	20(c)	2	0	0	0	0	0	0	0	0	0	0
Pyrene	2300(a)	3	0	0	0	0	0	0	0	0	0	0
Xylenes	20(c)	2	0	0	0	0	0	0	0	0	0	0
2,4-D	780(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDD	5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDE	3.5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Sites: UPR-100-N-4, UPR-100-N-8

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Aldrin	0.07(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1248	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1254	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1260	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Beta-BHC - Lindane	0.92(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Dieldrin	0.075(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Endrin	23(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
gamma-Chlordane	0.92(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Heptachlor	0.27(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Total TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Total Non-TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Radionuclide	**(pCi/g)**											
Americium-241	.06(p)	3	0	0	0	0	0	0	0	0	0	0
Beryllium-7	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbon-14	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cesium-134	.0388(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cesium-137	3.517(n)	3	0	0	0	0	0	0	0	0	0	0
Chromium-51	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt-58	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt-60	.0147(n)	3	2	67	0	0	0	0	0	291	0	291
Europium-152	.04(p)	(l)	(l)	0	0	0	0	0	0	0	0	0
Europium-154	.1151(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Europium-155	.0781(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Gross Alpha	8.4(o)	3	2	67	0	0	0	0	0	291	0	291
Gross Beta	16(o)	3	3	100	0	0	0	0	0	436	0	436
Plutonium-238	0.0045(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Plutonium-239/240	.0203(n)	3	1	33	0	0	0	0	0	145	0	145
Potassium-40	18.48(n)	3	0	0	0	0	0	0	0	0	0	0

Reference Sites: UPR-100-N-4, UPR-100-N-8

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Radium-226	1.037(n)	3	(l)	0	0	0	0	0	0	0	0	0
Sodium-22	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Strontium-90	0.3135(n)	3	1	33	0	0	0	0	0	145	0	145
Technetium-99	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Thorium-228	2.5(o)	3	0	0	0	0	0	0	0	0	0	0
Thorium-232	1.308(n)	3	0	0	0	0	0	0	0	0	0	0
Uranium-233/234	1.366(n)	3	0	0	0	0	0	0	0	0	0	0
Uranium-235	.0507(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Uranium-238	1.388(n)	3	0	0	0	0	0	0	0	0	0	0
Total Radioactive Waste (may include mixed waste)					0	0	0	0	0	436	0	436

Summary

Total TSCA Mixed Waste	0	0	0	0	0	0	0	0
Total Non-TSCA Mixed Waste	0	0	0	0	0	0	0	0
Total Mixed Waste	0	0	0	0	0	0	0	0
Total Non-Radioactive TSCA Hazardous Waste	0	0	0	0	0	0	0	0
Total Non-Radioactive Hazardous Waste (Non-TSCA)	0	0	0	0	0	0	0	0
Total Hazardous Waste (Non-Radioactive)	0	0	0	0	0	0	0	0
Total Radioactive Waste (Non-Hazardous)	0	0	0	0	0	436	0	436

Reference Sites: UPR-100-N-9, UPR-100-N-14

Sub-Project	100-BC	100-DR	100-FR	100-HR	100-KR	100-NR	300-FF	TOTAL
Contaminated Volume (yd3)	0	0	0	0	0	344	0	344

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Inorganic	**(mg/kg)**											
Aluminum	230000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Antimony	31(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Arsenic	8.92(b)	(l)	(l)	0	0	0	0	0	0	0	0	0
Barium	5500(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Beryllium	1.77(b)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cadmium	2(c)	2	0	0	0	0	0	0	0	0	0	0
Chromium	100(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt	(d)	(l)	(l)	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Copper	2900(a)	2	0	0	0	0	0	0	0	0	0	0
Iron	(d)	(l)	(l)	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Lead	250(c)	2	0	0	0	0	0	0	0	0	0	0
Magnesium	(d)	(l)	(l)	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Manganese	10,900(e)	2	0	0	0	0	0	0	0	0	0	0
Mercury	1.25(b)	(l)	(l)	0	0	0	0	0	0	0	0	0
Nickel	1600(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Potassium	(d)	(l)	(l)	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Selenium	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Silver	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Sodium	(d)	(l)	(l)	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Sulfate	(d)	(l)	(l)	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Thallium	5.5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Sites: UPR-100-N-9, UPR-100-N-14

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Vanadium	550(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Zinc	23000(a)	2	0	0	0	0	0	0	0	0	0	0
Organic	**(mg/kg)**											
Acetone	7800(a)	2	0	0	0	0	0	0	0	0	0	0
Benzene	.5(c)	2	0	0	0	0	0	0	0	0	0	0
2-Butanone	47000(a)	2	0	0	0	0	0	0	0	0	0	0
Carbondisulfide	7800(a)	2	0	0	0	0	0	0	0	0	0	0
1,2-Dichloroethene (total)	700(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Methyl-2-Pentanone	3900(a)	2	0	0	0	0	0	0	0	0	0	0
Methylene Chloride	.5(c)	2	0	0	0	0	0	0	0	0	0	0
Tetrachloroethene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Toluene	40(c)	2	0	0	0	0	0	0	0	0	0	0
Trichloroethene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Vinyl Chloride	0.63(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Acenaphthene	4700(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Anthracene	23000(a)	2	0	0	0	0	0	0	0	0	0	0
Benzo(a)anthracene	1.6(a)	2	0	0	0	0	0	0	0	0	0	0
Benzo(a)pyrene	0.16(a)	2	0	0	0	0	0	0	0	0	0	0
Benzo(b)fluoranthene	1.6(a)	2	0	0	0	0	0	0	0	0	0	0
Benzo(ghi)perylene	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
Benzo(k)fluoranthene	1.6(g)	(l)	(l)	0	0	0	0	0	0	0	0	0
Benzoic Acid	310000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Bis (2-ethylhexhl) phthalate	85(a)	2	0	0	0	0	0	0	0	0	0	0
Butylbenzylphthalate	16000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbazole	60(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbon Tetracloride	9.2(a)	2	0	0	0	0	0	0	0	0	0	0
4-Chloro-3-Methylphenol	10(h)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Chlorophenol	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Sites: UPR-100-N-9, UPR-100-N-14

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Chloroform	200(a)	2	0	0	0	0	0	0	0	0	0	0
4-Chloroaniline	310(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Chrysene	16(g)	2	0	0	0	0	0	0	0	0	0	0
Di-n-octyl-phthalate	1600(a)		0	0	0	0	0	0	0	0	0	0
Di-n-butyl-phthalate	7800(a)	2	0	0	0	0	0	0	0	0	0	0
Dibenzofuran	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,3 Dichlorobenzene	7000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,4 Dichlorobenzene	50(a)	2	0	0	0	0	0	0	0	0	0	0
Diethyl phthalate	63000(a)	2	0	0	0	0	0	0	0	0	0	0
Ethylbenzene	20(c)	2	0	0	0	0	0	0	0	0	0	0
Fluoranthene	3100(a)	2	0	0	0	0	0	0	0	0	0	0
Fluorene	3100(a)	2	0	0	0	0	0	0	0	0	0	0
Indeno(1,2,3-cd)pyrene	1.6(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Hexanone	3900(g)	2	0	0	0	0	0	0	0	0	0	0
2-Methylnaphthalene	2300(f)	2	0	0	0	0	0	0	0	0	0	0
4-Methyphenol	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Naphthalene	3100(a)	2	0	0	0	0	0	0	0	0	0	0
2-Nitrophenol	4800(i)	(l)	(l)	0	0	0	0	0	0	0	0	0
N-Nitrosodiphenylamine	240(a)	2	0	0	0	0	0	0	0	0	0	0
Pentachlorophenol	10(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Phenathrene	2,300(f)	2	0	0	0	0	0	0	0	0	0	0
Phenol	47000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,1,1-Trichloroethane	20(c)	2	0	0	0	0	0	0	0	0	0	0
Pyrene	2300(a)	2	0	0	0	0	0	0	0	0	0	0
Xylenes	20(c)	2	0	0	0	0	0	0	0	0	0	0
2,4-D	780(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDD	5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDE	3.5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Sites: UPR-100-N-9, UPR-100-N-14

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Aldrin	0.07(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1248	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1254	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1260	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Beta-BHC - Lindane	0.92(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Dieldrin	0.075(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Endrin	23(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
gamma-Chlordane	0.92(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Heptachlor	0.27(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Total TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Total Non-TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Radionuclide	**(pCi/g)**											
Americium-241	.06(p)	(l)	(l)	0	0	0	0	0	0	0	0	0
Beryllium-7	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbon-14	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cesium-134	.0388(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cesium-137	3.517(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Chromium-51	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt-58	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt-60	.0147(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Europium-152	.04(p)	(l)	(l)	0	0	0	0	0	0	0	0	0
Europium-154	.1151(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Europium-155	.0781(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Gross Alpha	8.4(o)	(l)	(l)	0	0	0	0	0	0	0	0	0
Gross Beta	16(o)	(l)	(l)	0	0	0	0	0	0	0	0	0
Plutonium-238	0.0045(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Plutonium-239/240	.0203(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Potassium-40	18.48(n)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Sites: UPR-100-N-9, UPR-100-N-14

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Radium-226	1.037(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Sodium-22	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Strontium-90	0.3135(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Technetium-99	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Thorium-228	2.5(o)	(l)	(l)	0	0	0	0	0	0	0	0	0
Thorium-232	1.308(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Uranium-233/234	1.366(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Uranium-235	.0507(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Uranium-238	1.388(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Total Radioactive Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Summary												
Total TSCA Mixed Waste					0	0	0	0	0	0	0	0
Total Non-TSCA Mixed Waste					0	0	0	0	0	0	0	0
Total Mixed Waste					0	0	0	0	0	0	0	0
Total Non-Radioactive TSCA Hazardous Waste					0	0	0	0	0	0	0	0
Total Non-Radioactive Hazardous Waste (Non-TSCA)					0	0	0	0	0	0	0	0
Total Hazardous Waste (Non-Radioactive)					0	0	0	0	0	0	0	0
Total Radioactive Waste (Non-Hazardous)					0	0	0	0	0	0	0	0

APPENDIX H-2

WASTE CATEGORIZATION TABLES FOR NON-BURIAL GROUND WASTE SITES WITH SLUDGE

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Reference Sites: 116-C-5 Sludge

Sub-Project	100-BC	100-DR	100-FR	100-HR	100-KR	100-NR	300-FF	TOTAL
Contaminated Volume (yd3)	31,312	27,800	11,725	18,764	49,656	0	0	139,257

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Inorganic	**(mg/kg)**											
Aluminum	230000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Antimony	31(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Arsenic	8.92(b)	(l)	(l)	0	0	0	0	0	0	0	0	0
Barium	5500(a)	2	0	0	0	0	0	0	0	0	0	0
Beryllium	1.77(b)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cadmium	2(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Chromium	100(c)	2	2	100	31,312	27,800	11,725	18,764	49,656	0	0	139,257
Cobalt	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Copper	2900(a)	2	0	0	0	0	0	0	0	0	0	0
Iron	(d)	2	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Lead	250(c)	2	1	50	15,656	13,900	5,863	9,382	24,828	0	0	69,629
Magnesium	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Manganese	10,900(e)	2	0	0	0	0	0	0	0	0	0	0
Mercury	1.25(b)	2	2	100	31,312	27,800	11,725	18,764	49,656	0	0	139,257
Nickel	1600(a)	2	0	0	0	0	0	0	0	0	0	0
Potassium	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Selenium	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Silver	390(a)	2	0	0	0	0	0	0	0	0	0	0
Sodium	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Sulfate	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Thallium	5.5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Sites: 116-C-5 Sludge

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Vanadium	550(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Zinc	23000(a)	2	0	0	0	0	0	0	0	0	0	0
Organic	**(mg/kg)**											
Acetone	7800(a)	2	0	0	0	0	0	0	0	0	0	0
Benzene	.5(c)	2	0	0	0	0	0	0	0	0	0	0
2-Butanone	47000(a)	2	0	0	0	0	0	0	0	0	0	0
Carbondisulfide	7800(a)	2	0	0	0	0	0	0	0	0	0	0
1,2-Dichloroethene (total)	700(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Methyl-2-Pentanone	3900(a)	2	0	0	0	0	0	0	0	0	0	0
Methylene Chloride	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Tetrachloroethene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Toluene	40(c)	2	0	0	0	0	0	0	0	0	0	0
Trichloroethene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Vinyl Chloride	0.63(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Acenaphthene	4700(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Anthracene	23000(a)	2	0	0	0	0	0	0	0	0	0	0
Benzo(a)anthracene	1.6(a)	2	0	0	0	0	0	0	0	0	0	0
Benzo(a)pyrene	0.16(a)	2	0	0	0	0	0	0	0	0	0	0
Benzo(b)fluoranthene	1.6(a)	2	0	0	0	0	0	0	0	0	0	0
Benzo(ghi)perylene	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
Benzo(k)fluoranthene	1.6(g)	2	0	0	0	0	0	0	0	0	0	0
Benzoic Acid	310000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Bis (2-ethylhexhl) phthalate	85(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Butylbenzylphthalate	16000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbazole	60(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbon Tetracloride	9.2(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Chloro-3-Methylphenol	10(h)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Chlorophenol	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Sites: 116-C-5 Sludge

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Chloroform	200(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Chloroaniline	310(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Chrysene	16(g)	2	0	0	0	0	0	0	0	0	0	0
Di-n-octyl-phthalate	1600(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Di-n-butyl-phthalate	7800(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Dibenzofuran	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,3 Dichlorobenzene	7000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,4 Dichlorobenzene	50(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Diethyl phthalate	63000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Ethylbenzene	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Fluoranthene	3100(a)	2	0	0	0	0	0	0	0	0	0	0
Fluorene	3100(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Indeno(1,2,3-cd)pyrene	1.6(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Hexanone	3900(g)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Methylnaphthalene	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0
4-Methyphenol	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Naphthalene	3100(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
2-Nitrophenol	4800(i)	(l)	(l)	0	0	0	0	0	0	0	0	0
N-Nitrosodiphenylamine	240(a)	2	0	0	0	0	0	0	0	0	0	0
Pentachlorophenol	10(a)	2	0	0	0	0	0	0	0	0	0	0
Phenathrene	2,300(f)	2	0	0	0	0	0	0	0	0	0	0
Phenol	47000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
1,1,1-Trichloroethane	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
Pyrene	2300(a)	2	0	0	0	0	0	0	0	0	0	0
Xylenes	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0
2,4-D	780(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDD	5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
4,4'DDE	3.5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0

Reference Sites: 116-C-5 Sludge

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Aldrin	0.07(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1248	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1254	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Aroclor-1260	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Beta-BHC - Lindane	0.92(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Dieldrin	0.075(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Endrin	23(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
gamma-Chlordane	0.92(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Heptachlor	0.27(a)	(l)	(l)	0	0	0	0	0	0	0	0	0
Total TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Total Non-TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0
Radionuclide	**(pCi/g)**											
Americium-241	.06(p)	2	2	100	31,312	27,800	11,725	18,764	49,656	0	0	139,257
Beryllium-7	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Carbon-14	0(n)	2	2	100	31,312	27,800	11,725	18,764	49,656	0	0	139,257
Cesium-134	.0388(n)	2	0	0	0	0	0	0	0	0	0	0
Cesium-137	3.517(n)	2	2	100	31,312	27,800	11,725	18,764	49,656	0	0	139,257
Chromium-51	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt-58	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Cobalt-60	.0147(n)	2	2	100	31,312	27,800	11,725	18,764	49,656	0	0	139,257
Europium-152	.04(p)	2	2	100	31,312	27,800	11,725	18,764	49,656	0	0	139,257
Europium-154	.1151(n)	2	2	100	31,312	27,800	11,725	18,764	49,656	0	0	139,257
Europium-155	.0781(n)	2	2	100	31,312	27,800	11,725	18,764	49,656	0	0	139,257
Gross Alpha	8.4(o)	2	2	100	31,312	27,800	11,725	18,764	49,656	0	0	139,257
Gross Beta	16(o)	2	2	100	31,312	27,800	11,725	18,764	49,656	0	0	139,257
Plutonium-238	0.0045(n)	2	2	100	31,312	27,800	11,725	18,764	49,656	0	0	139,257
Plutonium-239/240	.0203(n)	2	2	100	31,312	27,800	11,725	18,764	49,656	0	0	139,257
Potassium-40	18.48(n)	2	0	0	0	0	0	0	0	0	0	0

Reference Sites: 116-C-5 Sludge

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Radium-226	1.037(n)	2	0	0	0	0	0	0	0	0	0	0
Sodium-22	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Strontium-90	0.3135(n)	2	0	0	0	0	0	0	0	0	0	0
Technetium-99	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Thorium-228	2.5(o)	2	0	0	0	0	0	0	0	0	0	0
Thorium-232	1.308(n)	(l)	(l)	0	0	0	0	0	0	0	0	0
Uranium-233/234	1.366(n)	2	1	50	15,656	13,900	5,863	9,382	24,828	0	0	69,629
Uranium-235	.0507(n)	2	1	50	15,656	13,900	5,863	9,382	24,828	0	0	69,629
Uranium-238	1.388(n)	2	1	50	15,656	13,900	5,863	9,382	24,828	0	0	69,629
Total Radioactive Waste (may include mixed waste)					31,312	27,800	11,725	18,764	49,656	0	0	139,257
Summary												
Total TSCA Mixed Waste					0	0	0	0	0	0	0	0
Total Non-TSCA Mixed Waste					31,312	27,800	11,725	18,764	49,656	0	0	139,257
Total Mixed Waste					31,312	27,800	11,725	18,764	49,656	0	0	139,257
Total Non-Radioactive TSCA Hazardous Waste					0	0	0	0	0	0	0	0
Total Non-Radioactive Hazardous Waste (Non-TSCA)					0	0	0	0	0	0	0	0
Total Hazardous Waste (Non-Radioactive)					0	0	0	0	0	0	0	0
Total Radioactive Waste (Non-Hazardous)					0	0	0	0	0	0	0	0

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APPENDIX H-3

WASTE CATEGORIZATION TABLES FOR BURIAL GROUND WASTE SITES

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Reference Site: 618-4

Sub-Project	100-BC	100-DR	100-FR	100-HR	100-IU	100-KR	100-NR	300-FF	TOTAL
Contaminated Volume (yd3)	0	0	0	0	0	0	0	69,667	69,667

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-IU (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Inorganic	**(mg/kg)**												
Aluminum	230000(a)	10	0	0	0	0	0	0	0	0	0	0	0
Antimony	31(a)	10	0	0	0	0	0	0	0	0	0	0	0
Arsenic	8.92(b)	10	0	0	0	0	0	0	0	0	0	0	0
Barium	5500(a)	10	0	0	0	0	0	0	0	0	0	0	0
Beryllium	1.77(b)	10	0	0	0	0	0	0	0	0	0	0	0
Cadmium	2(c)	10	0	0	0	0	0	0	0	0	0	0	0
Chromium	100(c)	10	3	30	0	0	0	0	0	0	0	20900	20900
Cobalt	(d)	10	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Copper	2900(a)	10	0	0	0	0	0	0	0	0	0	0	0
Iron	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Lead	250(c)	10	2	20	0	0	0	0	0	0	0	13933	13933
Magnesium	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Manganese	10,900(e)	10	0	0	0	0	0	0	0	0	0	0	0
Mercury	1.25(b)	10	3	30	0	0	0	0	0	0	0	20900	20900
Nickel	1600(a)	10	0	0	0	0	0	0	0	0	0	0	0
Potassium	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Selenium	390(a)	10	0	0	0	0	0	0	0	0	0	0	0
Silver	390(a)	10	0	0	0	0	0	0	0	0	0	0	0
Sodium	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Sulfate	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)

Reference Site: 618-4

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-IU (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Thallium	5.5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Vanadium	550(a)	10	0	0	0	0	0	0	0	0	0	0	0
Zinc	23000(a)	10	0	0	0	0	0	0	0	0	0	0	0
Organic	**(mg/kg)**												
Acetone	7800(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Benzene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
2-Butanone	47000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Carbondisulfide	7800(a)	10	0	0	0	0	0	0	0	0	0	0	0
1,2-Dichloroethene (total)	700(a)	10	0	0	0	0	0	0	0	0	0	0	0
4-Methyl-2-Pentanone	3900(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Methylene Chloride	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Tetrachloroethene	.5(c)	10	0	0	0	0	0	0	0	0	0	0	0
Toluene	40(c)	10	0	0	0	0	0	0	0	0	0	0	0
Trichloroethene	.5(c)	10	0	0	0	0	0	0	0	0	0	0	0
Vinyl Chloride	0.63(a)	10	0	0	0	0	0	0	0	0	0	0	0
Acenaphthene	4700(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Anthracene	23000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Benzo(a)anthracene	1.6(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Benzo(a)pyrene	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Benzo(b)fluoranthene	1.6(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Benzo(ghi)perylene	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Benzo(k)fluoranthene	1.6(g)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Benzoic Acid	310000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Bis (2-ethylhexhl) phthalate	85(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Butylbenzylphthalate	16000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Carbazole	60(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Carbon Tetracloride	9.2(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0

Reference Site: 618-4

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-IU (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
4-Chloro-3-Methylphenol	10(h)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
2-Chlorophenol	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Chloroform	200(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
4-Chloroaniline	310(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Chrysene	16(g)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Di-n-octyl-phthalate	1600(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Di-n-butyl-phthalate	7800(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Dibenzofuran	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
1,3 Dichlorobenzene	7000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
1,4 Dichlorobenzene	50(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Diethyl phthalate	63000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Ethylbenzene	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Fluoranthene	3100(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Fluorene	3100(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Indeno(1,2,3-cd)pyrene	1.6(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
2-Hexanone	3900(g)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
2-Methylnaphthalene	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
4-Methyphenol	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Naphthalene	3100(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
2-Nitrophenol	4800(i)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
N-Nitrosodiphenylamine	240(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Pentachlorophenol	10(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Phenathrene	2,300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Phenol	47000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
1,1,1-Trichloroethane	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Pyrene	2300(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Xylenes	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0	0

Reference Site: 618-4

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-IU (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
2,4-D	780(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
4,4'DDD	5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
4,4'DDE	3.5(a)	10	0	0	0	0	0	0	0	0	0	0	0
Aldrin	0.07(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Aroclor-1248	0.16(a)	10	0	0	0	0	0	0	0	0	0	0	0
Aroclor-1254	0.16(a)	10	6	60	0	0	0	0	0	0	0	41800	41,800
Aroclor-1260	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Beta-BHC - Lindane	0.92(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Dieldrin	0.075(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Endrin	23(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
gamma-Chlordane	0.92(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Heptachlor	0.27(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Total TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	41,800	41,800
Total Non-TSCA Hazardous Waste (may include mixed waste					0	0	0	0	0	0	0	0	0
Radionuclide	**(pCi/g)**												
Americium-241	.06(p)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Beryllium-7	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Carbon-14	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Cesium-134	.0388(n)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Cesium-137	3.517(n)	10	0	0	0	0	0	0	0	0	0	0	0
Chromium-51	0(n)	10	0	0	0	0	0	0	0	0	0	0	0
Cobalt-58	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Cobalt-60	.0147(n)	10	0	0	0	0	0	0	0	0	0	0	0
Europium-152	.04(p)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Europium-154	.1151(n)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Europium-155	.0781(n)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Gross Alpha	8.4(o)	10	8	80	0	0	0	0	0	0	0	55734	55734
Gross Beta	16(o)	10	8	80	0	0	0	0	0	0	0	55734	55734

Reference Site: 618-4

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-IU (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Plutonium-238	0.0045(n)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Plutonium-239/240	.0203(n)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Potassium-40	18.48(n)	10	0	0	0	0	0	0	0	0	0	0	0
Radium-226	1.037(n)	10	0	0	0	0	0	0	0	0	0	0	0
Sodium-22	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Strontium-90	0.3135(n)	10	2	20	0	0	0	0	0	0	0	13933	13933
Technetium-99	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Thorium-228	2.5(o)	10	0	0	0	0	0	0	0	0	0	0	0
Thorium-232	1.308(n)	10	2	20	0	0	0	0	0	0	0	13933	13933
Uranium-233/234	1.366(n)	10	10	100	0	0	0	0	0	0	0	69667	69667
Uranium-235	.0507(n)	16	15	94	0	0	0	0	0	0	0	65313	65313
Uranium-238	1.388(n)	16	13	81	0	0	0	0	0	0	0	56604	56604
Total Radioactive Waste (may include mixed waste)					0	0	0	0	0	0	0	69,667	69,667

Summary

Total TSCA Mixed Waste	0	0	0	0	0	0	0	41,800	41,800
Total Non-TSCA Mixed Waste	0	0	0	0	0	0	0	0	0
Total Mixed Waste	0	0	0	0	0	0	0	41,800	41,800
Total Non-Radioactive TSCA Hazardous Waste	0	0	0	0	0	0	0	0	0
Total Non-Radioactive Hazardous Waste (Non-TSCA)	0	0	0	0	0	0	0	0	0
Total Hazardous Waste (Non-Radioactive)	0	0	0	0	0	0	0	0	0
Total Radioactive Waste (Non-Hazardous)	0	0	0	0	0	0	0	27,867	27,867

Reference Site: 618-5

Sub-Project	100-BC	100-DR	100-FR	100-HR	100-IU	100-KR	100-NR	300-FF	TOTAL
Contaminated Volume (yd3)	0	0	0	0	0	0	0	319,047	319,047

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-IU (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Inorganic	**(mg/kg)**												
Aluminum	230000(a)	11	0	0	0	0	0	0	0	0	0	0	0
Antimony	31(a)	11	0	0	0	0	0	0	0	0	0	0	0
Arsenic	8.92(b)	11	0	0	0	0	0	0	0	0	0	0	0
Barium	5500(a)	11	0	0	0	0	0	0	0	0	0	0	0
Beryllium	1.77(b)	11	0	0	0	0	0	0	0	0	0	0	0
Cadmium	2(c)	11	2	18	0	0	0	0	0	0	0	58,009	58,009
Chromium	100(c)	11	0	0	0	0	0	0	0	0	0	0	0
Cobalt	(d)	11	0	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Copper	2900(a)	11	0	0	0	0	0	0	0	0	0	0	0
Iron	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Lead	250(c)	11	0	0	0	0	0	0	0	0	0	0	0
Magnesium	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Manganese	10,900(e)	11	0	0	0	0	0	0	0	0	0	0	0
Mercury	1.25(b)	11	4	36	0	0	0	0	0	0	0	116,017	116,017
Nickel	1600(a)	11	0	0	0	0	0	0	0	0	0	0	0
Potassium	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Selenium	390(a)	11	0	0	0	0	0	0	0	0	0	0	0
Silver	390(a)	11	0	0	0	0	0	0	0	0	0	0	0
Sodium	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)
Sulfate	(d)	(l)	(l)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)	(d)

Reference Site: 618-5

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-IU (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Thallium	5.5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Vanadium	550(a)	11	0	0	0	0	0	0	0	0	0	0	0
Zinc	23000(a)	11	0	0	0	0	0	0	0	0	0	0	0
Organic	**(mg/kg)**												
Acetone	7800(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Benzene	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
2-Butanone	47000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Carbondisulfide	7800(a)	12	0	0	0	0	0	0	0	0	0	0	0
1,2-Dichloroethene (total)	700(a)	12	0	0	0	0	0	0	0	0	0	0	0
4-Methyl-2-Pentanone	3900(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Methylene Chloride	.5(c)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Tetrachloroethene	.5(c)	12	0	0	0	0	0	0	0	0	0	0	0
Toluene	40(c)	12	0	0	0	0	0	0	0	0	0	0	0
Trichloroethene	.5(c)	12	0	0	0	0	0	0	0	0	0	0	0
Vinyl Chloride	0.63(a)	12	0	0	0	0	0	0	0	0	0	0	0
Acenaphthene	4700(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Anthracene	23000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Benzo(a)anthracene	1.6(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Benzo(a)pyrene	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Benzo(b)fluoranthene	1.6(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Benzo(ghi)perylene	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Benzo(k)fluoranthene	1.6(g)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Benzoic Acid	310000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Bis (2-ethylhexhl) phthalate	85(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Butylbenzylphthalate	16000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Carbazole	60(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Carbon Tetracloride	9.2(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0

Reference Site: 618-5

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-IU (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
4-Chloro-3-Methylphenol	10(h)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
2-Chlorophenol	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Chloroform	200(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
4-Chloroaniline	310(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Chrysene	16(g)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Di-n-octyl-phthalate	1600(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Di-n-butyl-phthalate	7800(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Dibenzofuran	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
1,3 Dichlorobenzene	7000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
1,4 Dichlorobenzene	50(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Diethyl phthalate	63000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Ethylbenzene	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Fluoranthene	3100(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Fluorene	3100(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Indeno(1,2,3-cd)pyren	1.6(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
2-Hexanone	3900(g)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
2-Methylnaphthalene	2300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
4-Methyphenol	390(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Naphthalene	3100(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
2-Nitrophenol	4800(i)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
N-Nitrosodiphenylamine	240(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Pentachlorophenol	10(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Phenathrene	2,300(f)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Phenol	47000(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
1,1,1-Trichloroethane	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Pyrene	2300(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Xylenes	20(c)	(l)	(l)	0	0	0	0	0	0	0	0	0	0

Reference Site: 618-5

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-IU (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
2,4-D	780(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
4,4'DDD	5(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
4,4'DDE	3.5(a)	12	0	0	0	0	0	0	0	0	0	0	0
Aldrin	0.07(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Aroclor-1248	0.16(a)	12	0	0	0	0	0	0	0	0	0	0	0
Aroclor-1254	0.16(a)	12	0	0	0	0	0	0	0	0	0	0	0
Aroclor-1260	0.16(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Beta-BHC - Lindane	0.92(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Dieldrin	0.075(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Endrin	23(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
gamma-Chlordane	0.92(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Heptachlor	0.27(a)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Total TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0	0
Total Non-TSCA Hazardous Waste (may include mixed wast					0	0	0	0	0	0	0	116,017	116,017
Radionuclide	**(pCi/g)**												
Americium-241	.06(p)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Beryllium-7	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Carbon-14	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Cesium-134	.0388(n)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Cesium-137	3.517(n)	11	0	0	0	0	0	0	0	0	0	0	0
Chromium-51	0(n)	11	2	18	0	0	0	0	0	0	0	58,009	58,009
Cobalt-58	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Cobalt-60	.0147(n)	11	0	0	0	0	0	0	0	0	0	0	0
Europium-152	.04(p)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Europium-154	.1151(n)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Europium-155	.0781(n)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Gross Alpha	8.4(o)	11	5	45	0	0	0	0	0	0	0	145,021	145,021
Gross Beta	16(o)	11	5	45	0	0	0	0	0	0	0	145,021	145,021

Reference Site: 618-5

Constituent	Cut-off Limit	Number of Intervals	Number of Intervals Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limit 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-IU (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Plutonium-238	0.0045(n)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Plutonium-239/240	.0203(n)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Potassium-40	18.48(n)	11	0	0	0	0	0	0	0	0	0	0	0
Radium-226	1.037(n)	11	1	9	0	0	0	0	0	0	0	29,004	29,004
Sodium-22	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Strontium-90	0.3135(n)	11	3	27	0	0	0	0	0	0	0	87,013	87,013
Technetium-99	0(n)	(l)	(l)	0	0	0	0	0	0	0	0	0	0
Thorium-228	2.5(o)	11	0	0	0	0	0	0	0	0	0	0	0
Thorium-232	1.308(n)	11	0	0	0	0	0	0	0	0	0	0	0
Uranium-233/234	1.366(n)	11	9	82	0	0	0	0	0	0	0	261,038	261,038
Uranium-235	.0507(n)	16	14	88	0	0	0	0	0	0	0	279,166	279,166
Uranium-238	1.388(n)	16	14	88	0	0	0	0	0	0	0	279,166	279,166
Total Radioactive Waste (may include mixed waste)					0	0	0	0	0	0	0	319,047	319,047
Summary													
Total TSCA Mixed Waste					0	0	0	0	0	0	0	0	0
Total Non-TSCA Mixed Waste					0	0	0	0	0	0	0	116,017	116,017
Total Mixed Waste					0	0	0	0	0	0	0	116,017	116,017
Total Non-Radioactive TSCA Hazardous Waste					0	0	0	0	0	0	0	0	0
Total Non-Radioactive Hazardous Waste (Non-TSCA)					0	0	0	0	0	0	0	0	0
Total Hazardous Waste (Non-Radioactive)					0	0	0	0	0	0	0	0	0
Total Radioactive Waste (Non-Hazardous)					0	0	0	0	0	0	0	203,030	203,030

Reference Sites: 118-B-1, 118-C-1, 118-D-2, 118-D-3, 118-F-1, 118-H-1

Sub-Project	100-BC	100-DR	100-FR	100-HR	100-IU	100-KR	100-NR	300-FF	TOTAL
Contaminated Volume (yd3)	150,155	186,493	76,642	86,222	0	0	0	0	499,512

Constituent	Cut-off Limit	Number of Sites with Constituent	Number of Sites Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-IU (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Inorganic	**(mg/kg)**												
Aluminum	230000(a)	0	0	0	0	0	0	0	0	0	0	0	0
Antimony	31(a)	0	0	0	0	0	0	0	0	0	0	0	0
Arsenic	8.92(b)	0	0	0	0	0	0	0	0	0	0	0	0
Barium	5500(a)	0	0	0	0	0	0	0	0	0	0	0	0
Beryllium	1.77(b)	0	0	0	0	0	0	0	0	0	0	0	0
Cadmium	2(c)	0	0	0	0	0	0	0	0	0	0	0	0
Chromium	100(c)	0	0	0	0	0	0	0	0	0	0	0	0
Cobalt	(d)	0	0	0	0	0	0	0	0	0	0	0	0
Copper	2900(a)	0	0	0	0	0	0	0	0	0	0	0	0
Iron	(d)	0	0	0	0	0	0	0	0	0	0	0	0
Lead	250(c)	0	0	0	0	0	0	0	0	0	0	0	0
Magnesium	(d)	0	0	0	0	0	0	0	0	0	0	0	0
Manganese	10,900(e)	0	0	0	0	0	0	0	0	0	0	0	0
Mercury	1.25(b)	0	0	0	0	0	0	0	0	0	0	0	0
Nickel	1600(a)	0	0	0	0	0	0	0	0	0	0	0	0
Potassium	(d)	0	0	0	0	0	0	0	0	0	0	0	0
Selenium	390(a)	0	0	0	0	0	0	0	0	0	0	0	0
Silver	390(a)	0	0	0	0	0	0	0	0	0	0	0	0
Sodium	(d)	0	0	0	0	0	0	0	0	0	0	0	0

Reference Sites: 118-B-1, 118-C-1, 118-D-2, 118-D-3, 118-F-1, 118-H-1

Constituent	Cut-off Limit	Number of Sites with Constituent	Number of Sites Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-IU (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Sulfate	(d)	0	0	0	0	0	0	0	0	0	0	0	0
Thallium	5.5(a)	0	0	0	0	0	0	0	0	0	0	0	0
Vanadium	550(a)	0	0	0	0	0	0	0	0	0	0	0	0
Zinc	23000(a)	0	0	0	0	0	0	0	0	0	0	0	0
Organic	**(mg/kg)**												
Acetone	7800(a)	0	0	0	0	0	0	0	0	0	0	0	0
Benzene	.5(c)	0	0	0	0	0	0	0	0	0	0	0	0
2-Butanone	47000(a)	0	0	0	0	0	0	0	0	0	0	0	0
Carbondisulfide	7800(a)	0	0	0	0	0	0	0	0	0	0	0	0
1,2-Dichloroethene (total)	700(a)	0	0	0	0	0	0	0	0	0	0	0	0
4-Methyl-2-Pentanone	3900(a)	0	0	0	0	0	0	0	0	0	0	0	0
Methylene Chloride	.5(c)	0	0	0	0	0	0	0	0	0	0	0	0
Tetrachloroethene	.5(c)	0	0	0	0	0	0	0	0	0	0	0	0
Toluene	40(c)	0	0	0	0	0	0	0	0	0	0	0	0
Trichloroethene	.5(c)	0	0	0	0	0	0	0	0	0	0	0	0
Vinyl Chloride	0.63(a)	0	0	0	0	0	0	0	0	0	0	0	0
Acenaphthene	4700(a)	0	0	0	0	0	0	0	0	0	0	0	0
Anthracene	23000(a)	0	0	0	0	0	0	0	0	0	0	0	0
Benzo(a)anthracene	1.6(a)	0	0	0	0	0	0	0	0	0	0	0	0
Benzo(a)pyrene	0.16(a)	0	0	0	0	0	0	0	0	0	0	0	0
Benzo(b)fluoranthene	1.6(a)	0	0	0	0	0	0	0	0	0	0	0	0
Benzo(ghi)perylene	2300(f)	0	0	0	0	0	0	0	0	0	0	0	0
Benzo(k)fluoranthene	1.6(g)	0	0	0	0	0	0	0	0	0	0	0	0
Benzoic Acid	310000(a)	0	0	0	0	0	0	0	0	0	0	0	0
Bis (2-ethylhexhl) phthalate	85(a)	0	0	0	0	0	0	0	0	0	0	0	0
Butylbenzylphthalate	16000(a)	0	0	0	0	0	0	0	0	0	0	0	0
Carbazole	60(a)	0	0	0	0	0	0	0	0	0	0	0	0

Reference Sites: 118-B-1, 118-C-1, 118-D-2, 118-D-3, 118-F-1, 118-H-1

Constituent	Cut-off Limit	Number of Sites with Constituent	Number of Sites Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-IU (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Carbon Tetracloride	9.2(a)	0	0	0	0	0	0	0	0	0	0	0	0
4-Chloro-3-Methylphenol	10(h)	0	0	0	0	0	0	0	0	0	0	0	0
2-Chlorophenol	390(a)	0	0	0	0	0	0	0	0	0	0	0	0
Chloroform	200(a)	0	0	0	0	0	0	0	0	0	0	0	0
4-Chloroaniline	310(a)	0	0	0	0	0	0	0	0	0	0	0	0
Chrysene	16(g)	0	0	0	0	0	0	0	0	0	0	0	0
Di-n-octyl-phthalate	1600(a)	0	0	0	0	0	0	0	0	0	0	0	0
Di-n-butyl-phthalate	7800(a)	0	0	0	0	0	0	0	0	0	0	0	0
Dibenzofuran	2300(f)	0	0	0	0	0	0	0	0	0	0	0	0
1,3 Dichlorobenzene	7000(a)	0	0	0	0	0	0	0	0	0	0	0	0
1,4 Dichlorobenzene	50(a)	0	0	0	0	0	0	0	0	0	0	0	0
Diethyl phthalate	63000(a)	0	0	0	0	0	0	0	0	0	0	0	0
Ethylbenzene	20(c)	0	0	0	0	0	0	0	0	0	0	0	0
Fluoranthene	3100(a)	0	0	0	0	0	0	0	0	0	0	0	0
Fluorene	3100(a)	0	0	0	0	0	0	0	0	0	0	0	0
Indeno(1,2,3-cd)pyrene	1.6(a)	0	0	0	0	0	0	0	0	0	0	0	0
2-Hexanone	3900(g)	0	0	0	0	0	0	0	0	0	0	0	0
2-Methylnaphthalene	2300(f)	0	0	0	0	0	0	0	0	0	0	0	0
4-Methyphenol	390(a)	0	0	0	0	0	0	0	0	0	0	0	0
Naphthalene	3100(a)	0	0	0	0	0	0	0	0	0	0	0	0
2-Nitrophenol	4800(i)	0	0	0	0	0	0	0	0	0	0	0	0
N-Nitrosodiphenylamine	240(a)	0	0	0	0	0	0	0	0	0	0	0	0
Pentachlorophenol	10(a)	0	0	0	0	0	0	0	0	0	0	0	0
Phenathrene	2,300(f)	0	0	0	0	0	0	0	0	0	0	0	0
Phenol	47000(a)	0	0	0	0	0	0	0	0	0	0	0	0
1,1,1-Trichloroethane	20(c)	0	0	0	0	0	0	0	0	0	0	0	0
Pyrene	2300(a)	0	0	0	0	0	0	0	0	0	0	0	0

Reference Sites: 118-B-1, 118-C-1, 118-D-2, 118-D-3, 118-F-1, 118-H-1

Constituent	Cut-off Limit	Number of Sites with Constituent	Number of Sites Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-IU (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Xylenes	20(c)	0	0	0	0	0	0	0	0	0	0	0	0
2,4-D	780(a)	0	0	0	0	0	0	0	0	0	0	0	0
4,4'DDD	5(a)	0	0	0	0	0	0	0	0	0	0	0	0
4,4'DDE	3.5(a)	0	0	0	0	0	0	0	0	0	0	0	0
Aldrin	0.07(a)	0	0	0	0	0	0	0	0	0	0	0	0
Aroclor-1248	0.16(a)	0	0	0	0	0	0	0	0	0	0	0	0
Aroclor-1254	0.16(a)	0	0	0	0	0	0	0	0	0	0	0	0
Aroclor-1260	0.16(a)	0	0	0	0	0	0	0	0	0	0	0	0
Beta-BHC - Lindane	0.92(a)	0	0	0	0	0	0	0	0	0	0	0	0
Dieldrin	0.075(a)	0	0	0	0	0	0	0	0	0	0	0	0
Endrin	23(a)	0	0	0	0	0	0	0	0	0	0	0	0
gamma-Chlordane	0.92(a)	0	0	0	0	0	0	0	0	0	0	0	0
Heptachlor	0.27(a)	0	0	0	0	0	0	0	0	0	0	0	0
Total TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0	0
Total Non-TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0	0
Radionuclide	**(pCi/g)**												
Americium-241	.06(p)	0	0	0	0	0	0	0	0	0	0	0	0
Beryllium-7	0(n)	0	0	0	0	0	0	0	0	0	0	0	0
Carbon-14	0(n)	1	1	100	150,155	186,493	76,642	86,222	0	0	0	0	499,512
Cesium-134	.0388(n)	0	0	0	0	0	0	0	0	0	0	0	0
Cesium-137	3.517(n)	1	1	100	150,155	186,493	76,642	86,222	0	0	0	0	499,512
Chromium-51	0(n)	0	0	0	0	0	0	0	0	0	0	0	0
Cobalt-58	0(n)	0	0	0	0	0	0	0	0	0	0	0	0
Cobalt-60	.0147(n)	1	1	100	150,155	186,493	76,642	86,222	0	0	0	0	499,512
Europium-152	.04(p)	1	1	100	150,155	186,493	76,642	86,222	0	0	0	0	499,512
Europium-154	.1151(n)	0	0	0	0	0	0	0	0	0	0	0	0
Europium-155	.0781(n)	0	0	0	0	0	0	0	0	0	0	0	0
Gross Alpha	8.4(o)	1	1	100	150,155	186,493	76,642	86,222	0	0	0	0	499,512

Reference Sites: 118-B-1, 118-C-1, 118-D-2, 118-D-3, 118-F-1, 118-H-1

Constituent	Cut-off Limit	Number of Sites with Constituent	Number of Sites Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-IU (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Gross Beta	16(o)	1	1	100	150,155	186,493	76,642	86,222	0	0	0	0	499,512
Plutonium-238	0.0045(n)	0	0	0	0	0	0	0	0	0	0	0	0
Plutonium-239/240	.0203(n)	0	0	0	0	0	0	0	0	0	0	0	0
Potassium-40	18.48(n)	0	0	0	0	0	0	0	0	0	0	0	0
Radium-226	1.037(n)	0	0	0	0	0	0	0	0	0	0	0	0
Sodium-22	0(n)	0	0	0	0	0	0	0	0	0	0	0	0
Strontium-90	0.3135(n)	1	1	100	150,155	186,493	76,642	86,222	0	0	0	0	499,512
Technetium-99	0(n)	0	0	0	0	0	0	0	0	0	0	0	0
Thorium-228	2.5(o)	0	0	0	0	0	0	0	0	0	0	0	0
Thorium-232	1.308(n)	0	0	0	0	0	0	0	0	0	0	0	0
Uranium-233/234	1.366(n)	0	0	0	0	0	0	0	0	0	0	0	0
Uranium-235	.0507(n)	0	0	0	0	0	0	0	0	0	0	0	0
Uranium-238	1.388(n)	0	0	0	0	0	0	0	0	0	0	0	0
Total Radioactive Waste (may include mixed waste)					150,155	186,493	76,642	86,222	0	0	0	0	499,512

Summary

Total TSCA Mixed Waste	0	0	0	0	0	0	0	0	0
Total Non-TSCA Mixed Waste	0	0	0	0	0	0	0	0	0
Total Mixed Waste	0	0	0	0	0	0	0	0	0
Total Non-Radioactive TSCA Hazardous Waste	0	0	0	0	0	0	0	0	0
Total Non-Radioactive Hazardous Waste (Non-TSCA)	0	0	0	0	0	0	0	0	0
Total Hazardous Waste (Non-Radioactive)	0	0	0	0	0	0	0	0	0
Total Radioactive Waste (Non-Hazardous)	150,155	186,493	76,642	86,222	0	0	0	0	499,512

Reference Sites: 118-F-5, 118-F-6

Sub-Project	100-BC	100-DR	100-FR	100-HR	100-IU	100-KR	100-NR	300-FF	TOTAL
Contaminated Volume (yd3)	0	0	86,765	0	0	0	0	0	86,765

Constituent	Cut-off Limit	Number of Sites with Constituent	Number of Sites Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-IU (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Inorganic	**(mg/kg)**												
Aluminum	230000(a)	0	0	0	0	0	0	0	0	0	0	0	0
Antimony	31(a)	0	0	0	0	0	0	0	0	0	0	0	0
Arsenic	8.92(b)	0	0	0	0	0	0	0	0	0	0	0	0
Barium	5500(a)	0	0	0	0	0	0	0	0	0	0	0	0
Beryllium	1.77(b)	0	0	0	0	0	0	0	0	0	0	0	0
Cadmium	2(c)	0	0	0	0	0	0	0	0	0	0	0	0
Chromium	100(c)	0	0	0	0	0	0	0	0	0	0	0	0
Cobalt	(d)	0	0	0	0	0	0	0	0	0	0	0	0
Copper	2900(a)	0	0	0	0	0	0	0	0	0	0	0	0
Iron	(d)	0	0	0	0	0	0	0	0	0	0	0	0
Lead	250(c)	0	0	0	0	0	0	0	0	0	0	0	0
Magnesium	(d)	0	0	0	0	0	0	0	0	0	0	0	0
Manganese	10,900(e)	0	0	0	0	0	0	0	0	0	0	0	0
Mercury	1.25(b)	0	0	0	0	0	0	0	0	0	0	0	0
Nickel	1600(a)	0	0	0	0	0	0	0	0	0	0	0	0
Potassium	(d)	0	0	0	0	0	0	0	0	0	0	0	0
Selenium	390(a)	0	0	0	0	0	0	0	0	0	0	0	0
Silver	390(a)	0	0	0	0	0	0	0	0	0	0	0	0
Sodium	(d)	0	0	0	0	0	0	0	0	0	0	0	0

Reference Sites: 118-F-5, 118-F-6

Constituent	Cut-off Limit	Number of Sites with Constituent	Number of Sites Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-IU (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Sulfate	(d)	0	0	0	0	0	0	0	0	0	0	0	0
Thallium	5.5(a)	0	0	0	0	0	0	0	0	0	0	0	0
Vanadium	550(a)	0	0	0	0	0	0	0	0	0	0	0	0
Zinc	23000(a)	0	0	0	0	0	0	0	0	0	0	0	0
Organic	**(mg/kg)**												
Acetone	7800(a)	0	0	0	0	0	0	0	0	0	0	0	0
Benzene	.5(c)	0	0	0	0	0	0	0	0	0	0	0	0
2-Butanone	47000(a)	0	0	0	0	0	0	0	0	0	0	0	0
Carbondisulfide	7800(a)	0	0	0	0	0	0	0	0	0	0	0	0
1,2-Dichloroethene (total)	700(a)	0	0	0	0	0	0	0	0	0	0	0	0
4-Methyl-2-Pentanone	3900(a)	0	0	0	0	0	0	0	0	0	0	0	0
Methylene Chloride	.5(c)	0	0	0	0	0	0	0	0	0	0	0	0
Tetrachloroethene	.5(c)	0	0	0	0	0	0	0	0	0	0	0	0
Toluene	40(c)	0	0	0	0	0	0	0	0	0	0	0	0
Trichloroethene	.5(c)	0	0	0	0	0	0	0	0	0	0	0	0
Vinyl Chloride	0.63(a)	0	0	0	0	0	0	0	0	0	0	0	0
Acenaphthene	4700(a)	0	0	0	0	0	0	0	0	0	0	0	0
Anthracene	23000(a)	0	0	0	0	0	0	0	0	0	0	0	0
Benzo(a)anthracene	1.6(a)	0	0	0	0	0	0	0	0	0	0	0	0
Benzo(a)pyrene	0.16(a)	0	0	0	0	0	0	0	0	0	0	0	0
Benzo(b)fluoranthene	1.6(a)	0	0	0	0	0	0	0	0	0	0	0	0
Benzo(ghi)perylene	2300(f)	0	0	0	0	0	0	0	0	0	0	0	0
Benzo(k)fluoranthene	1.6(g)	0	0	0	0	0	0	0	0	0	0	0	0
Benzoic Acid	310000(a)	0	0	0	0	0	0	0	0	0	0	0	0
Bis (2-ethylhexhl) phthalate	85(a)	0	0	0	0	0	0	0	0	0	0	0	0
Butylbenzylphthalate	16000(a)	0	0	0	0	0	0	0	0	0	0	0	0
Carbazole	60(a)	0	0	0	0	0	0	0	0	0	0	0	0

Reference Sites: 118-F-5, 118-F-6

Constituent	Cut-off Limit	Number of Sites with Constituent	Number of Sites Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-IU (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Carbon Tetracloride	9.2(a)	0	0	0	0	0	0	0	0	0	0	0	0
4-Chloro-3-Methylphenol	10(h)	0	0	0	0	0	0	0	0	0	0	0	0
2-Chlorophenol	390(a)	0	0	0	0	0	0	0	0	0	0	0	0
Chloroform	200(a)	0	0	0	0	0	0	0	0	0	0	0	0
4-Chloroaniline	310(a)	0	0	0	0	0	0	0	0	0	0	0	0
Chrysene	16(g)	0	0	0	0	0	0	0	0	0	0	0	0
Di-n-octyl-phthalate	1600(a)	0	0	0	0	0	0	0	0	0	0	0	0
Di-n-butyl-phthalate	7800(a)	0	0	0	0	0	0	0	0	0	0	0	0
Dibenzofuran	2300(f)	0	0	0	0	0	0	0	0	0	0	0	0
1,3 Dichlorobenzene	7000(a)	0	0	0	0	0	0	0	0	0	0	0	0
1,4 Dichlorobenzene	50(a)	0	0	0	0	0	0	0	0	0	0	0	0
Diethyl phthalate	63000(a)	0	0	0	0	0	0	0	0	0	0	0	0
Ethylbenzene	20(c)	0	0	0	0	0	0	0	0	0	0	0	0
Fluoranthene	3100(a)	0	0	0	0	0	0	0	0	0	0	0	0
Fluorene	3100(a)	0	0	0	0	0	0	0	0	0	0	0	0
Indeno(1,2,3-cd)pyren	1.6(a)	0	0	0	0	0	0	0	0	0	0	0	0
2-Hexanone	3900(g)	0	0	0	0	0	0	0	0	0	0	0	0
2-Methylnaphthalene	2300(f)	0	0	0	0	0	0	0	0	0	0	0	0
4-Methyphenol	390(a)	0	0	0	0	0	0	0	0	0	0	0	0
Naphthalene	3100(a)	0	0	0	0	0	0	0	0	0	0	0	0
2-Nitrophenol	4800(i)	0	0	0	0	0	0	0	0	0	0	0	0
N-Nitrosodiphenylamine	240(a)	0	0	0	0	0	0	0	0	0	0	0	0
Pentachlorophenol	10(a)	0	0	0	0	0	0	0	0	0	0	0	0
Phenathrene	2,300(f)	0	0	0	0	0	0	0	0	0	0	0	0
Phenol	47000(a)	0	0	0	0	0	0	0	0	0	0	0	0
1,1,1-Trichloroethane	20(c)	0	0	0	0	0	0	0	0	0	0	0	0
Pyrene	2300(a)	0	0	0	0	0	0	0	0	0	0	0	0

Reference Sites: 118-F-5, 118-F-6

Constituent	Cut-off Limit	Number of Sites with Constituent	Number of Sites Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-IU (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Xylenes	20(c)	0	0	0	0	0	0	0	0	0	0	0	0
2,4-D	780(a)	0	0	0	0	0	0	0	0	0	0	0	0
4,4'DDD	5(a)	0	0	0	0	0	0	0	0	0	0	0	0
4,4'DDE	3.5(a)	0	0	0	0	0	0	0	0	0	0	0	0
Aldrin	0.07(a)	0	0	0	0	0	0	0	0	0	0	0	0
Aroclor-1248	0.16(a)	0	0	0	0	0	0	0	0	0	0	0	0
Aroclor-1254	0.16(a)	0	0	0	0	0	0	0	0	0	0	0	0
Aroclor-1260	0.16(a)	0	0	0	0	0	0	0	0	0	0	0	0
Beta-BHC - Lindane	0.92(a)	0	0	0	0	0	0	0	0	0	0	0	0
Dieldrin	0.075(a)	0	0	0	0	0	0	0	0	0	0	0	0
Endrin	23(a)	0	0	0	0	0	0	0	0	0	0	0	0
gamma-Chlordane	0.92(a)	0	0	0	0	0	0	0	0	0	0	0	0
Heptachlor	0.27(a)	0	0	0	0	0	0	0	0	0	0	0	0
Total TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0	0
Total Non-TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0	0
Radionuclide	**(pCi/g)**												
Americium-241	.06(p)	0	0	0	0	0	0	0	0	0	0	0	0
Beryllium-7	0(n)	0	0	0	0	0	0	0	0	0	0	0	0
Carbon-14	0(n)	0	0	0	0	0	0	0	0	0	0	0	0
Cesium-134	.0388(n)	0	0	0	0	0	0	0	0	0	0	0	0
Cesium-137	3.517(n)	0	0	0	0	0	0	0	0	0	0	0	0
Chromium-51	0(n)	0	0	0	0	0	0	0	0	0	0	0	0
Cobalt-58	0(n)	0	0	0	0	0	0	0	0	0	0	0	0
Cobalt-60	.0147(n)	0	0	0	0	0	0	0	0	0	0	0	0
Europium-152	.04(p)	0	0	0	0	0	0	0	0	0	0	0	0
Europium-154	.1151(n)	0	0	0	0	0	0	0	0	0	0	0	0
Europium-155	.0781(n)	0	0	0	0	0	0	0	0	0	0	0	0
Gross Alpha	8.4(o)	2	2	100	0	0	86,765	0	0	0	0	0	86,765

Reference Sites: 118-F-5, 118-F-6

Constituent	Cut-off Limit	Number of Sites with Constituent	Number of Sites Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-IU (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Gross Beta	16(o)	2	2	100	0	0	86,765	0	0	0	0	0	86,765
Plutonium-238	0.0045(n)	0	0	0	0	0	0	0	0	0	0	0	0
Plutonium-239/240	.0203(n)	2	1	50	0	0	43,383	0	0	0	0	0	43,383
Potassium-40	18.48(n)	0	0	0	0	0	0	0	0	0	0	0	0
Radium-226	1.037(n)	0	0	0	0	0	0	0	0	0	0	0	0
Sodium-22	0(n)	0	0	0	0	0	0	0	0	0	0	0	0
Strontium-90	0.3135(n)	2	2	100	0	0	86,765	0	0	0	0	0	86,765
Technetium-99	0(n)	0	0	0	0	0	0	0	0	0	0	0	0
Thorium-228	2.5(o)	0	0	0	0	0	0	0	0	0	0	0	0
Thorium-232	1.308(n)	0	0	0	0	0	0	0	0	0	0	0	0
Uranium-233/234	1.366(n)	0	0	0	0	0	0	0	0	0	0	0	0
Uranium-235	.0507(n)	0	0	0	0	0	0	0	0	0	0	0	0
Uranium-238	1.388(n)	0	0	0	0	0	0	0	0	0	0	0	0
Total Radioactive Waste (may include mixed waste)					0	0	86,765	0	0	0	0	0	86,765
Summary													
Total TSCA Mixed Waste					0	0	0	0	0	0	0	0	0
Total Non-TSCA Mixed Waste					0	0	0	0	0	0	.0	0	0
Total Mixed Waste					0	0	0	0	0	0	0	0	0
Total Non-Radioactive TSCA Hazardous Waste					0	0	0	0	0	0	0	0	0
Total Non-Radioactive Hazardous Waste (Non-TSCA)					0	0	0	0	0	0	0	0	0
Total Hazardous Waste (Non-Radioactive)					0	0	0	0	0	0	0	0	0
Total Radioactive Waste (Non-Hazardous)					0	0	86,765	0	0	0	0	0	86,765

Reference Site: 118-F-4

Sub-Project	100-BC	100-DR	100-FR	100-HR	100-IU	100-KR	100-NR	300-FF	TOTAL
Contaminated Volume (yd3)	0	0	451	0	0	0	0	0	451

Constituent	Cut-off Limit	Number of Sites with Constituent	Number of Sites Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-IU (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Inorganic	**(mg/kg)**												
Aluminum	230000(a)	0	0	0	0	0	0	0	0	0	0	0	0
Antimony	31(a)	0	0	0	0	0	0	0	0	0	0	0	0
Arsenic	8.92(b)	0	0	0	0	0	0	0	0	0	0	0	0
Barium	5500(a)	0	0	0	0	0	0	0	0	0	0	0	0
Beryllium	1.77(b)	0	0	0	0	0	0	0	0	0	0	0	0
Cadmium	2(c)	0	0	0	0	0	0	0	0	0	0	0	0
Chromium	100(c)	0	0	0	0	0	0	0	0	0	0	0	0
Cobalt	(d)	0	0	0	0	0	0	0	0	0	0	0	0
Copper	2900(a)	0	0	0	0	0	0	0	0	0	0	0	0
Iron	(d)	0	0	0	0	0	0	0	0	0	0	0	0
Lead	250(c)	0	0	0	0	0	0	0	0	0	0	0	0
Magnesium	(d)	0	0	0	0	0	0	0	0	0	0	0	0
Manganese	10,900(e)	0	0	0	0	0	0	0	0	0	0	0	0
Mercury	1.25(b)	0	0	0	0	0	0	0	0	0	0	0	0
Nickel	1600(a)	0	0	0	0	0	0	0	0	0	0	0	0
Potassium	(d)	0	0	0	0	0	0	0	0	0	0	0	0
Selenium	390(a)	0	0	0	0	0	0	0	0	0	0	0	0
Silver	390(a)	0	0	0	0	0	0	0	0	0	0	0	0
Sodium	(d)	0	0	0	0	0	0	0	0	0	0	0	0

Reference Site: 118-F-4

Constituent	Cut-off Limit	Number of Sites with Constituent	Number of Sites Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-IU (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Sulfate	(d)	0	0	0	0	0	0	0	0	0	0	0	0
Thallium	5.5(a)	0	0	0	0	0	0	0	0	0	0	0	0
Vanadium	550(a)	0	0	0	0	0	0	0	0	0	0	0	0
Zinc	23000(a)	0	0	0	0	0	0	0	0	0	0	0	0
Organic	**(mg/kg)**												
Acetone	7800(a)	0	0	0	0	0	0	0	0	0	0	0	0
Benzene	.5(c)	0	0	0	0	0	0	0	0	0	0	0	0
2-Butanone	47000(a)	0	0	0	0	0	0	0	0	0	0	0	0
Carbondisulfide	7800(a)	0	0	0	0	0	0	0	0	0	0	0	0
1,2-Dichloroethene (total)	700(a)	0	0	0	0	0	0	0	0	0	0	0	0
4-Methyl-2-Pentanone	3900(a)	0	0	0	0	0	0	0	0	0	0	0	0
Methylene Chloride	.5(c)	0	0	0	0	0	0	0	0	0	0	0	0
Tetrachloroethene	.5(c)	0	0	0	0	0	0	0	0	0	0	0	0
Toluene	40(c)	0	0	0	0	0	0	0	0	0	0	0	0
Trichloroethene	.5(c)	0	0	0	0	0	0	0	0	0	0	0	0
Vinyl Chloride	0.63(a)	0	0	0	0	0	0	0	0	0	0	0	0
Acenaphthene	4700(a)	0	0	0	0	0	0	0	0	0	0	0	0
Anthracene	23000(a)	0	0	0	0	0	0	0	0	0	0	0	0
Benzo(a)anthracene	1.6(a)	0	0	0	0	0	0	0	0	0	0	0	0
Benzo(a)pyrene	0.16(a)	0	0	0	0	0	0	0	0	0	0	0	0
Benzo(b)fluoranthene	1.6(a)	0	0	0	0	0	0	0	0	0	0	0	0
Benzo(ghi)perylene	2300(f)	0	0	0	0	0	0	0	0	0	0	0	0
Benzo(k)fluoranthene	1.6(g)	0	0	0	0	0	0	0	0	0	0	0	0
Benzoic Acid	310000(a)	0	0	0	0	0	0	0	0	0	0	0	0
Bis (2-ethylhexhl) phthalate	85(a)	0	0	0	0	0	0	0	0	0	0	0	0
Butylbenzylphthalate	16000(a)	0	0	0	0	0	0	0	0	0	0	0	0
Carbazole	60(a)	0	0	0	0	0	0	0	0	0	0	0	0

Reference Site: 118-F-4

Constituent	Cut-off Limit	Number of Sites with Constituent	Number of Sites Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-IU (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Carbon Tetracloride	9.2(a)	0	0	0	0	0	0	0	0	0	0	0	0
4-Chloro-3-Methylphenol	10(h)	0	0	0	0	0	0	0	0	0	0	0	0
2-Chlorophenol	390(a)	0	0	0	0	0	0	0	0	0	0	0	0
Chloroform	200(a)	0	0	0	0	0	0	0	0	0	0	0	0
4-Chloroaniline	310(a)	0	0	0	0	0	0	0	0	0	0	0	0
Chrysene	16(g)	0	0	0	0	0	0	0	0	0	0	0	0
Di-n-octyl-phthalate	1600(a)	0	0	0	0	0	0	0	0	0	0	0	0
Di-n-butyl-phthalate	7800(a)	0	0	0	0	0	0	0	0	0	0	0	0
Dibenzofuran	2300(f)	0	0	0	0	0	0	0	0	0	0	0	0
1,3 Dichlorobenzene	7000(a)	0	0	0	0	0	0	0	0	0	0	0	0
1;4 Dichlorobenzene	50(a)	0	0	0	0	0	0	0	0	0	0	0	0
Diethyl phthalate	63000(a)	0	0	0	0	0	0	0	0	0	0	0	0
Ethylbenzene	20(c)	0	0	0	0	0	0	0	0	0	0	0	0
Fluoranthene	3100(a)	0	0	0	0	0	0	0	0	0	0	0	0
Fluorene	3100(a)	0	0	0	0	0	0	0	0	0	0	0	0
Indeno(1,2,3-cd)pyren	1.6(a)	0	0	0	0	0	0	0	0	0	0	0	0
2-Hexanone	3900(g)	0	0	0	0	0	0	0	0	0	0	0	0
2-Methylnaphthalene	2300(f)	0	0	0	0	0	0	0	0	0	0	0	0
4-Methyphenol	390(a)	0	0	0	0	0	0	0	0	0	0	0	0
Naphthalene	3100(a)	0	0	0	0	0	0	0	0	0	0	0	0
2-Nitrophenol	4800(i)	0	0	0	0	0	0	0	0	0	0	0	0
N-Nitrosodiphenylamine	240(a)	0	0	0	0	0	0	0	0	0	0	0	0
Pentachlorophenol	10(a)	0	0	0	0	0	0	0	0	0	0	0	0
Phenathrene	2,300(f)	0	0	0	0	0	0	0	0	0	0	0	0
Phenol	47000(a)	0	0	0	0	0	0	0	0	0	0	0	0
1,1,1-Trichloroethane	20(c)	0	0	0	0	0	0	0	0	0	0	0	0
Pyrene	2300(a)	0	0	0	0	0	0	0	0	0	0	0	0

Reference Site: 118-F-4

Constituent	Cut-off Limit	Number of Sites with Constituent	Number of Sites Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-IU (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Xylenes	20(c)	0	0	0	0	0	0	0	0	0	0	0	0
2,4-D	780(a)	0	0	0	0	0	0	0	0	0	0	0	0
4,4'DDD	5(a)	0	0	0	0	0	0	0	0	0	0	0	0
4,4'DDE	3.5(a)	0	0	0	0	0	0	0	0	0	0	0	0
Aldrin	0.07(a)	0	0	0	0	0	0	0	0	0	0	0	0
Aroclor-1248	0.16(a)	0	0	0	0	0	0	0	0	0	0	0	0
Aroclor-1254	0.16(a)	0	0	0	0	0	0	0	0	0	0	0	0
Aroclor-1260	0.16(a)	0	0	0	0	0	0	0	0	0	0	0	0
Beta-BHC - Lindane	0.92(a)	0	0	0	0	0	0	0	0	0	0	0	0
Dieldrin	0.075(a)	0	0	0	0	0	0	0	0	0	0	0	0
Endrin	23(a)	0	0	0	0	0	0	0	0	0	0	0	0
gamma-Chlordane	0.92(a)	0	0	0	0	0	0	0	0	0	0	0	0
Heptachlor	0.27(a)	0	0	0	0	0	0	0	0	0	0	0	0
Total TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0	0
Total Non-TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0	0
Radionuclide	**(pCi/g)**												
Americium-241	.06(p)	0	0	0	0	0	0	0	0	0	0	0	0
Beryllium-7	0(n)	0	0	0	0	0	0	0	0	0	0	0	0
Carbon-14	0(n)	2	2	100	0	0	451	0	0	0	0	0	451
Cesium-134	.0388(n)	0	0	0	0	0	0	0	0	0	0	0	0
Cesium-137	3.517(n)	0	0	0	0	0	0	0	0	0	0	0	0
Chromium-51	0(n)	0	0	0	0	0	0	0	0	0	0	0	0
Cobalt-58	0(n)	0	0	0	0	0	0	0	0	0	0	0	0
Cobalt-60	.0147(n)	0	0	0	0	0	0	0	0	0	0	0	0
Europium-152	.04(p)	0	0	0	0	0	0	0	0	0	0	0	0
Europium-154	.1151(n)	0	0	0	0	0	0	0	0	0	0	0	0
Europium-155	.0781(n)	0	0	0	0	0	0	0	0	0	0	0	0
Gross Alpha	8.4(o)	2	2	100	0	0	451	0	0	0	0	0	451

Reference Site: 118-F-4

Constituent	Cut-off Limit	Number of Sites with Constituent	Number of Sites Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-IU (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Gross Beta	16(o)	2	2	100	0	0	451	0	0	0	0	0	451
Plutonium-238	0.0045(n)	0	0	0	0	0	0	0	0	0	0	0	0
Plutonium-239/240	.0203(n)	0	0	0	0	0	0	0	0	0	0	0	0
Potassium-40	18.48(n)	0	0	0	0	0	0	0	0	0	0	0	0
Radium-226	1.037(n)	0	0	0	0	0	0	0	0	0	0	0	0
Sodium-22	0(n)	0	0	0	0	0	0	0	0	0	0	0	0
Strontium-90	0.3135(n)	0	0	0	0	0	0	0	0	0	0	0	0
Technetium-99	0(n)	0	0	0	0	0	0	0	0	0	0	0	0
Thorium-228	2.5(o)	0	0	0	0	0	0	0	0	0	0	0	0
Thorium-232	1.308(n)	0	0	0	0	0	0	0	0	0	0	0	0
Uranium-233/234	1.366(n)	0	0	0	0	0	0	0	0	0	0	0	0
Uranium-235	.0507(n)	0	0	0	0	0	0	0	0	0	0	0	0
Uranium-238	1.388(n)	0	0	0	0	0	0	0	0	0	0	0	0
Total Radioactive Waste (may include mixed waste)					0	0	451	0	0	0	0	0	451

Summary

	100-BC	100-DR	100-FR	100-HR	100-IU	100-KR	100-NR	300-FF	Total
Total TSCA Mixed Waste	0	0	0	0	0	0	0	0	0
Total Non-TSCA Mixed Waste	0	0	0	0	0	0	0	0	0
Total Mixed Waste	0	0	0	0	0	0	0	0	0
Total Non-Radioactive TSCA Hazardous Waste	0	0	0	0	0	0	0	0	0
Total Non-Radioactive Hazardous Waste (Non-TSCA)	0	0	0	0	0	0	0	0	0
Total Hazardous Waste (Non-Radioactive)	0	0	0	0	0	0	0	0	0
Total Radioactive Waste (Non-Hazardous)	0	0	451	0	0	0	0	0	451

Reference Site: 118-K-1

Sub-Project	100-BC	100-DR	100-FR	100-HR	100-IU	100-KR	100-NR	300-FF	TOTAL
Contaminated Volume (yd3)	0	0	0	0	0	259,259	0	0	259,259

Constituent	Cut-off Limit	Number of Sites with Constituent	Number of Sites Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-IU (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Inorganic	**(mg/kg)**												
Aluminum	230000(a)	0	0	0	0	0	0	0	0	0	0	0	0
Antimony	31(a)	0	0	0	0	0	0	0	0	0	0	0	0
Arsenic	8.92(b)	0	0	0	0	0	0	0	0	0	0	0	0
Barium	5500(a)	0	0	0	0	0	0	0	0	0	0	0	0
Beryllium	1.77(b)	0	0	0	0	0	0	0	0	0	0	0	0
Cadmium	2(c)	0	0	0	0	0	0	0	0	0	0	0	0
Chromium	100(c)	0	0	0	0	0	0	0	0	0	0	0	0
Cobalt	(d)	0	0	0	0	0	0	0	0	0	0	0	0
Copper	2900(a)	0	0	0	0	0	0	0	0	0	0	0	0
Iron	(d)	0	0	0	0	0	0	0	0	0	0	0	0
Lead	250(c)	0	0	0	0	0	0	0	0	0	0	0	0
Magnesium	(d)	0	0	0	0	0	0	0	0	0	0	0	0
Manganese	10,900(e)	0	0	0	0	0	0	0	0	0	0	0	0
Mercury	1.25(b)	0	0	0	0	0	0	0	0	0	0	0	0
Nickel	1600(a)	0	0	0	0	0	0	0	0	0	0	0	0
Potassium	(d)	0	0	0	0	0	0	0	0	0	0	0	0
Selenium	390(a)	0	0	0	0	0	0	0	0	0	0	0	0
Silver	390(a)	0	0	0	0	0	0	0	0	0	0	0	0
Sodium	(d)	0	0	0	0	0	0	0	0	0	0	0	0

Reference Site: 118-K-1

Constituent	Cut-off Limit	Number of Sites with Constituent	Number of Sites Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-IU (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Sulfate	(d)	0	0	0	0	0	0	0	0	0	0	0	0
Thallium	5.5(a)	0	0	0	0	0	0	0	0	0	0	0	0
Vanadium	550(a)	0	0	0	0	0	0	0	0	0	0	0	0
Zinc	23000(a)	0	0	0	0	0	0	0	0	0	0	0	0
Organic	**(mg/kg)**												
Acetone	7800(a)	0	0	0	0	0	0	0	0	0	0	0	0
Benzene	.5(c)	0	0	0	0	0	0	0	0	0	0	0	0
2-Butanone	47000(a)	0	0	0	0	0	0	0	0	0	0	0	0
Carbondisulfide	7800(a)	0	0	0	0	0	0	0	0	0	0	0	0
1,2-Dichloroethene (total)	700(a)	0	0	0	0	0	0	0	0	0	0	0	0
4-Methyl-2-Pentanone	3900(a)	0	0	0	0	0	0	0	0	0	0	0	0
Methylene Chloride	.5(c)	0	0	0	0	0	0	0	0	0	0	0	0
Tetrachloroethene	.5(c)	0	0	0	0	0	0	0	0	0	0	0	0
Toluene	40(c)	0	0	0	0	0	0	0	0	0	0	0	0
Trichloroethene	.5(c)	0	0	0	0	0	0	0	0	0	0	0	0
Vinyl Chloride	0.63(a)	0	0	0	0	0	0	0	0	0	0	0	0
Acenaphthene	4700(a)	0	0	0	0	0	0	0	0	0	0	0	0
Anthracene	23000(a)	0	0	0	0	0	0	0	0	0	0	0	0
Benzo(a)anthracene	1.6(a)	0	0	0	0	0	0	0	0	0	0	0	0
Benzo(a)pyrene	0.16(a)	0	0	0	0	0	0	0	0	0	0	0	0
Benzo(b)fluoranthene	1.6(a)	0	0	0	0	0	0	0	0	0	0	0	0
Benzo(ghi)perylene	2300(f)	0	0	0	0	0	0	0	0	0	0	0	0
Benzo(k)fluoranthene	1.6(g)	0	0	0	0	0	0	0	0	0	0	0	0
Benzoic Acid	310000(a)	0	0	0	0	0	0	0	0	0	0	0	0
Bis (2-ethylhexhl) phthalate	85(a)	0	0	0	0	0	0	0	0	0	0	0	0
Butylbenzylphthalate	16000(a)	0	0	0	0	0	0	0	0	0	0	0	0
Carbazole	60(a)	0	0	0	0	0	0	0	0	0	0	0	0

Reference Site: 118-K-1

Constituent	Cut-off Limit	Number of Sites with Constituent	Number of Sites Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-IU (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Carbon Tetracloride	9.2(a)	0	0	0	0	0	0	0	0	0	0	0	0
4-Chloro-3-Methylphenol	10(h)	0	0	0	0	0	0	0	0	0	0	0	0
2-Chlorophenol	390(a)	0	0	0	0	0	0	0	0	0	0	0	0
Chloroform	200(a)	0	0	0	0	0	0	0	0	0	0	0	0
4-Chloroaniline	310(a)	0	0	0	0	0	0	0	0	0	0	0	0
Chrysene	16(g)	0	0	0	0	0	0	0	0	0	0	0	0
Di-n-octyl-phthalate	1600(a)	0	0	0	0	0	0	0	0	0	0	0	0
Di-n-butyl-phthalate	7800(a)	0	0	0	0	0	0	0	0	0	0	0	0
Dibenzofuran	2300(f)	0	0	0	0	0	0	0	0	0	0	0	0
1,3 Dichlorobenzene	7000(a)	0	0	0	0	0	0	0	0	0	0	0	0
1,4 Dichlorobenzene	50(a)	0	0	0	0	0	0	0	0	0	0	0	0
Diethyl phthalate	63000(a)	0	0	0	0	0	0	0	0	0	0	0	0
Ethylbenzene	20(c)	0	0	0	0	0	0	0	0	0	0	0	0
Fluoranthene	3100(a)	0	0	0	0	0	0	0	0	0	0	0	0
Fluorene	3100(a)	0	0	0	0	0	0	0	0	0	0	0	0
Indeno(1,2,3-cd)pyrene	1.6(a)	0	0	0	0	0	0	0	0	0	0	0	0
2-Hexanone	3900(g)	0	0	0	0	0	0	0	0	0	0	0	0
2-Methylnaphthalene	2300(f)	0	0	0	0	0	0	0	0	0	0	0	0
4-Methyphenol	390(a)	0	0	0	0	0	0	0	0	0	0	0	0
Naphthalene	3100(a)	0	0	0	0	0	0	0	0	0	0	0	0
2-Nitrophenol	4800(i)	0	0	0	0	0	0	0	0	0	0	0	0
N-Nitrosodiphenylamine	240(a)	0	0	0	0	0	0	0	0	0	0	0	0
Pentachlorophenol	10(a)	0	0	0	0	0	0	0	0	0	0	0	0
Phenathrene	2,300(f)	0	0	0	0	0	0	0	0	0	0	0	0
Phenol	47000(a)	0	0	0	0	0	0	0	0	0	0	0	0
1,1,1-Trichloroethane	20(c)	0	0	0	0	0	0	0	0	0	0	0	0
Pyrene	2300(a)	0	0	0	0	0	0	0	0	0	0	0	0

Reference Site: 118-K-1

Constituent	Cut-off Limit	Number of Sites with Constituent	Number of Sites Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-IU (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Xylenes	20(c)	0	0	0	0	0	0	0	0	0	0	0	0
2,4-D	780(a)	0	0	0	0	0	0	0	0	0	0	0	0
4,4'DDD	5(a)	0	0	0	0	0	0	0	0	0	0	0	0
4,4'DDE	3.5(a)	0	0	0	0	0	0	0	0	0	0	0	0
Aldrin	0.07(a)	0	0	0	0	0	0	0	0	0	0	0	0
Aroclor-1248	0.16(a)	0	0	0	0	0	0	0	0	0	0	0	0
Aroclor-1254	0.16(a)	0	0	0	0	0	0	0	0	0	0	0	0
Aroclor-1260	0.16(a)	0	0	0	0	0	0	0	0	0	0	0	0
Beta-BHC - Lindane	0.92(a)	0	0	0	0	0	0	0	0	0	0	0	0
Dieldrin	0.075(a)	0	0	0	0	0	0	0	0	0	0	0	0
Endrin	23(a)	0	0	0	0	0	0	0	0	0	0	0	0
gamma-Chlordane	0.92(a)	0	0	0	0	0	0	0	0	0	0	0	0
Heptachlor	0.27(a)	0	0	0	0	0	0	0	0	0	0	0	0
Total TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0	0
Total Non-TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0	0
Radionuclide	**(pCi/g)**												
Americium-241	.06(p)	0	0	0	0	0	0	0	0	0	0	0	0
Beryllium-7	0(n)	0	0	0	0	0	0	0	0	0	0	0	0
Carbon-14	0(n)	1	1	100	0	0	0	0	0	259,259	0	0	259,259
Cesium-134	.0388(n)	0	0	0	0	0	0	0	0	0	0	0	0
Cesium-137	3.517(n)	1	1	100	0	0	0	0	0	259,259	0	0	259,259
Chromium-51	0(n)	0	0	0	0	0	0	0	0	0	0	0	0
Cobalt-58	0(n)	0	0	0	0	0	0	0	0	0	0	0	0
Cobalt-60	.0147(n)	1	1	100	0	0	0	0	0	259,259	0	0	259,259
Europium-152	.04(p)	1	1	100	0	0	0	0	0	259,259	0	0	259,259
Europium-154	.1151(n)	1	1	100	0	0	0	0	0	259,259	0	0	259,259
Europium-155	.0781(n)	0	0	0	0	0	0	0	0	0	0	0	0
Gross Alpha	8.4(o)	1	1	100	0	0	0	0	0	259,259	0	0	259,259

Reference Site: 118-K-1

Constituent	Cut-off Limit	Number of Sites with Constituent	Number of Sites Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-IU (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Gross Beta	16(o)	1	1	100	0	0	0	0	0	259,259	0	0	259,259
Plutonium-238	0.0045(n)	0	0	0	0	0	0	0	0	0	0	0	0
Plutonium-239/240	.0203(n)	1	1	100	0	0	0	0	0	259,259	0	0	259,259
Potassium-40	18.48(n)	0	0	0	0	0	0	0	0	0	0	0	0
Radium-226	1.037(n)	0	0	0	0	0	0	0	0	0	0	0	0
Sodium-22	0(n)	0	0	0	0	0	0	0	0	0	0	0	0
Strontium-90	0.3135(n)	1	1	100	0	0	0	0	0	259,259	0	0	259,259
Technetium-99	0(n)	0	0	0	0	0	0	0	0	0	0	0	0
Thorium-228	2.5(o)	0	0	0	0	0	0	0	0	0	0	0	0
Thorium-232	1.308(n)	0	0	0	0	0	0	0	0	0	0	0	0
Uranium-233/234	1.366(n)	0	0	0	0	0	0	0	0	0	0	0	0
Uranium-235	.0507(n)	0	0	0	0	0	0	0	0	0	0	0	0
Uranium-238	1.388(n)	0	0	0	0	0	0	0	0	0	0	0	0
Total Radioactive Waste (may include mixed waste)					0	0	0	0	0	259,259	0	0	259,259
Summary													
Total TSCA Mixed Waste					0	0	0	0	0	0	0	0	0
Total Non-TSCA Mixed Waste					0	0	0	0	0	0	0	0	0
Total Mixed Waste					0	0	0	0	0	0	0	0	0
Total Non-Radioactive TSCA Hazardous Waste					0	0	0	0	0	0	0	0	0
Total Non-Radioactive Hazardous Waste (Non-TSCA)					0	0	0	0	0	0	0	0	0
Total Hazardous Waste (Non-Radioactive)					0	0	0	0	0	0	0	0	0
Total Radioactive Waste (Non-Hazardous)					0	0	0	0	0	259,259	0	0	259,259

Reference Sites: Misc. Burial Grounds Burial Ground Materials

Sub-Project	100-BC	100-DR	100-FR	100-HR	100-IU	100-KR	100-NR	300-FF	TOTAL
Contaminated Volume (yd3)	372,507	385,774	54,492	59,262	5,994	994	0	251,691	1,130,714

Constituent	Cut-off Limit	Number of Sites with Data	Number of sites Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-IU (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Inorganic	**(mg/kg)**												
Aluminum	230000(a)	0	0	0	0	0	0	0	0	0	0	0	0
Antimony	31(a)	0	0	0	0	0	0	0	0	0	0	0	0
Arsenic	8.92(b)	0	0	0	0	0	0	0	0	0	0	0	0
Barium	5500(a)	0	0	0	0	0	0	0	0	0	0	0	0
Beryllium	1.77(b)	0	0	0	0	0	0	0	0	0	0	0	0
Cadmium	2(c)	0	0	0	0	0	0	0	0	0	0	0	0
Chromium	100(c)	0	0	0	0	0	0	0	0	0	0	0	0
Cobalt	(d)	0	0	0	0	0	0	0	0	0	0	0	0
Copper	2900(a)	0	0	0	0	0	0	0	0	0	0	0	0
Iron	(d)	0	0	0	0	0	0	0	0	0	0	0	0
Lead	250(c)	0	0	0	0	0	0	0	0	0	0	0	0
Magnesium	(d)	0	0	0	0	0	0	0	0	0	0	0	0
Manganese	10,900(e)	0	0	0	0	0	0	0	0	0	0	0	0
Mercury	1.25(b)	0	0	0	0	0	0	0	0	0	0	0	0
Nickel	1600(a)	0	0	0	0	0	0	0	0	0	0	0	0
Potassium	(d)	0	0	0	0	0	0	0	0	0	0	0	0
Selenium	390(a)	0	0	0	0	0	0	0	0	0	0	0	0
Silver	390(a)	0	0	0	0	0	0	0	0	0	0	0	0
Sodium	(d)	0	0	0	0	0	0	0	0	0	0	0	0

Reference Sites: Misc. Burial Grounds Burial Ground Materials

Constituent	Cut-off Limit	Number of Sites with Data	Number of sites Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-IU (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Sulfate	(d)	0	0	0	0	0	0	0	0	0	0	0	0
Thallium	5.5(a)	0	0	0	0	0	0	0	0	0	0	0	0
Vanadium	550(a)	0	0	0	0	0	0	0	0	0	0	0	0
Zinc	23000(a)	0	0	0	0	0	0	0	0	0	0	0	0
Organic	**(mg/kg)**												
Acetone	7800(a)	0	0	0	0	0	0	0	0	0	0	0	0
Benzene	.5(c)	0	0	0	0	0	0	0	0	0	0	0	0
2-Butanone	47000(a)	0	0	0	0	0	0	0	0	0	0	0	0
Carbondisulfide	7800(a)	0	0	0	0	0	0	0	0	0	0	0	0
1,2-Dichloroethene (total)	700(a)	0	0	0	0	0	0	0	0	0	0	0	0
4-Methyl-2-Pentanone	3900(a)	0	0	0	0	0	0	0	0	0	0	0	0
Methylene Chloride	.5(c)	0	0	0	0	0	0	0	0	0	0	0	0
Tetrachloroethene	.5(c)	0	0	0	0	0	0	0	0	0	0	0	0
Toluene	40(c)	0	0	0	0	0	0	0	0	0	0	0	0
Trichloroethene	.5(c)	0	0	0	0	0	0	0	0	0	0	0	0
Vinyl Chloride	0.63(a)	0	0	0	0	0	0	0	0	0	0	0	0
Acenaphthene	4700(a)	0	0	0	0	0	0	0	0	0	0	0	0
Anthracene	23000(a)	0	0	0	0	0	0	0	0	0	0	0	0
Benzo(a)anthracene	1.6(a)	0	0	0	0	0	0	0	0	0	0	0	0
Benzo(a)pyrene	0.16(a)	0	0	0	0	0	0	0	0	0	0	0	0
Benzo(b)fluoranthene	1.6(a)	0	0	0	0	0	0	0	0	0	0	0	0
Benzo(ghi)perylene	2300(f)	0	0	0	0	0	0	0	0	0	0	0	0
Benzo(k)fluoranthene	1.6(g)	0	0	0	0	0	0	0	0	0	0	0	0
Benzoic Acid	310000(a)	0	0	0	0	0	0	0	0	0	0	0	0
Bis (2-ethylhexhl) phthalate	85(a)	0	0	0	0	0	0	0	0	0	0	0	0
Butylbenzylphthalate	16000(a)	0	0	0	0	0	0	0	0	0	0	0	0
Carbazole	60(a)	0	0	0	0	0	0	0	0	0	0	0	0

Reference Sites: Misc. Burial Grounds Burial Ground Materials

Constituent	Cut-off Limit	Number of Sites with Data	Number of sites Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-IU (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Carbon Tetracloride	9.2(a)	0	0	0	0	0	0	0	0	0	0	0	0
4-Chloro-3-Methylphenol	10(h)	0	0	0	0	0	0	0	0	0	0	0	0
2-Chlorophenol	390(a)	0	0	0	0	0	0	0	0	0	0	0	0
Chloroform	200(a)	0	0	0	0	0	0	0	0	0	0	0	0
4-Chloroaniline	310(a)	0	0	0	0	0	0	0	0	0	0	0	0
Chrysene	16(g)	0	0	0	0	0	0	0	0	0	0	0	0
Di-n-octyl-phthalate	1600(a)	0	0	0	0	0	0	0	0	0	0	0	0
Di-n-butyl-phthalate	7800(a)	0	0	0	0	0	0	0	0	0	0	0	0
Dibenzofuran	2300(f)	0	0	0	0	0	0	0	0	0	0	0	0
1,3 Dichlorobenzene	7000(a)	0	0	0	0	0	0	0	0	0	0	0	0
1,4 Dichlorobenzene	50(a)	0	0	0	0	0	0	0	0	0	0	0	0
Diethyl phthalate	63000(a)	0	0	0	0	0	0	0	0	0	0	0	0
Ethylbenzene	20(c)	0	0	0	0	0	0	0	0	0	0	0	0
Fluoranthene	3100(a)	0	0	0	0	0	0	0	0	0	0	0	0
Fluorene	3100(a)	0	0	0	0	0	0	0	0	0	0	0	0
Indeno(1,2,3-cd)pyren	1.6(a)	0	0	0	0	0	0	0	0	0	0	0	0
2-Hexanone	3900(g)	0	0	0	0	0	0	0	0	0	0	0	0
2-Methylnaphthalene	2300(f)	0	0	0	0	0	0	0	0	0	0	0	0
4-Methyphenol	390(a)	0	0	0	0	0	0	0	0	0	0	0	0
Naphthalene	3100(a)	0	0	0	0	0	0	0	0	0	0	0	0
2-Nitrophenol	4800(i)	0	0	0	0	0	0	0	0	0	0	0	0
N-Nitrosodiphenylamine	240(a)	0	0	0	0	0	0	0	0	0	0	0	0
Pentachlorophenol	10(a)	0	0	0	0	0	0	0	0	0	0	0	0
Phenathrene	2,300(f)	0	0	0	0	0	0	0	0	0	0	0	0
Phenol	47000(a)	0	0	0	0	0	0	0	0	0	0	0	0
1,1,1-Trichloroethane	20(c)	0	0	0	0	0	0	0	0	0	0	0	0
Pyrene	2300(a)	0	0	0	0	0	0	0	0	0	0	0	0

Reference Sites: Misc. Burial Grounds Burial Ground Materials

Constituent	Cut-off Limit	Number of Sites with Data	Number of sites Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-IU (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Xylenes	20(c)	0	0	0	0	0	0	0	0	0	0	0	0
2,4-D	780(a)	0	0	0	0	0	0	0	0	0	0	0	0
4,4'DDD	5(a)	0	0	0	0	0	0	0	0	0	0	0	0
4,4'DDE	3.5(a)	0	0	0	0	0	0	0	0	0	0	0	0
Aldrin	0.07(a)	0	0	0	0	0	0	0	0	0	0	0	0
Aroclor-1248	0.16(a)	0	0	0	0	0	0	0	0	0	0	0	0
Aroclor-1254	0.16(a)	0	0	0	0	0	0	0	0	0	0	0	0
Aroclor-1260	0.16(a)	0	0	0	0	0	0	0	0	0	0	0	0
Beta-BHC - Lindane	0.92(a)	0	0	0	0	0	0	0	0	0	0	0	0
Dieldrin	0.075(a)	0	0	0	0	0	0	0	0	0	0	0	0
Endrin	23(a)	0	0	0	0	0	0	0	0	0	0	0	0
gamma-Chlordane	0.92(a)	0	0	0	0	0	0	0	0	0	0	0	0
Heptachlor	0.27(a)	0	0	0	0	0	0	0	0	0	0	0	0
Total TSCA Hazardous Waste (may include mixed waste)					0	0	0	0	0	0	0	0	0
Total Non-TSCA Hazardous Waste (may include mixed waste					0	0	0	0	0	0	0	0	0
Radionuclide	**(pCi/g)**												
Americium-241	.06(p)	0	0	0	0	0	0	0	0	0	0	0	0
Beryllium-7	0(n)	0	0	0	0	0	0	0	0	0	0	0	0
Carbon-14	0(n)	0	0	0	0	0	0	0	0	0	0	0	0
Cesium-134	.0388(n)	0	0	0	0	0	0	0	0	0	0	0	0
Cesium-137	3.517(n)	0	0	0	0	0	0	0	0	0	0	0	0
Chromium-51	0(n)	0	0	0	0	0	0	0	0	0	0	0	0
Cobalt-58	0(n)	0	0	0	0	0	0	0	0	0	0	0	0
Cobalt-60	.0147(n)	64	17	27	98,947	102,471	14,474	15,741	1,592	264	0	66,855	300,346
Europium-152	.04(p)	0	0	0	0	0	0	0	0	0	0	0	0
Europium-154	.1151(n)	0	0	0	0	0	0	0	0	0	0	0	0
Europium-155	.0781(n)	0	0	0	0	0	0	0	0	0	0	0	0
Gross Alpha	8.4(o)	0	64	100	372,507	385,774	54,492	59,262	5,994	994	0	251,691	1,130,714

Reference Sites: Misc. Burial Grounds Burial Ground Materials

Constituent	Cut-off Limit	Number of Sites with Data	Number of sites Over Limit	% Over Limit	Volume Over Limit 100-BC (yd3)	Volume Over Limit 100-DR (yd3)	Volume Over Limits 100-FR (yd3)	Volume Over Limit 100-HR (yd3)	Volume Over Limit 100-IU (yd3)	Volume Over Limit 100-KR (yd3)	Volume Over Limit 100-NR (yd3)	Volume Over Limit 300-FF (yd3)	Total Volume Over Limit (yd3)
Gross Beta	16(o)	0	64	100	372,507	385,774	54,492	59,262	5,994	994	0	251,691	1,130,714
Plutonium-238	0.0045(n)	0	0	0	0	0	0	0	0	0	0	0	0
Plutonium-239/240	.0203(n)	0	0	0	0	0	0	0	0	0	0	0	0
Potassium-40	18.48(n)	0	0	0	0	0	0	0	0	0	0	0	0
Radium-226	1.037(n)	0	0	0	0	0	0	0	0	0	0	0	0
Sodium-22	0(n)	0	0	0	0	0	0	0	0	0	0	0	0
Strontium-90	0.3135(n)	0	0	0	0	0	0	0	0	0	0	0	0
Technetium-99	0(n)	0	0	0	0	0	0	0	0	0	0	0	0
Thorium-228	2.5(o)	0	0	0	0	0	0	0	0	0	0	0	0
Thorium-232	1.308(n)	0	0	0	0	0	0	0	0	0	0	0	0
Uranium-233/234	1.366(n)	0	0	0	0	0	0	0	0	0	0	0	0
Uranium-235	.0507(n)	0	0	0	0	0	0	0	0	0	0	0	0
Uranium-238	1.388(n)	0	0	0	0	0	0	0	0	0	0	0	0
Total Radioactive Waste (may include mixed waste)					372,507	385,774	54,492	59,262	5,994	994	0	251,691	1,130,714
Summary													
Total TSCA Mixed Waste					0	0	0	0	0	0	0	0	0
Total Non-TSCA Mixed Waste					0	0	0	0	0	0	0	0	0
Total Mixed Waste					0	0	0	0	0	0	0	0	0
Total Non-Radioactive TSCA Hazardous Waste					0	0	0	0	0	0	0	0	0
Total Non-Radioactive Hazardous Waste (Non-TSCA)					0	0	0	0	0	0	0	0	0
Total Hazardous Waste (Non-Radioactive)					0	0	0	0	0	0	0	0	0
Total Radioactive Waste (Non-Hazardous)					372,507	385,774	54,492	59,262	5,994	994	0	251,691	1,130,714

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APPENDIX I

OCCUPATIONAL CONSTITUENT LIMITS FOR SOIL CONCENTRATION FOR INHALATION PATHWAY

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APPENDIX I-1

INORGANIC OCCUPATIONAL CONSTITUENT LIMITS FOR SOIL CONCENTRATION FOR INHALATION PATHWAY

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Occupational Soil Concentration Limits for Inorganic Constituents

Constituents	WAC/OSHA/NIOSH Permissible Air Exposure Limit (mg/m^3)	Occupational Concentration Limit for Soil Contamination (mg/kg)
Soil Concentration Limits Based on Maximum Dust Storm (1.7 mg/m^3)		
Aluminum	5	2,941,176
Antimony	0.5	294,118
Arsenic	0.1 (a)	58,824 (a)
Barium	0.5	294,118
Beryllium	0.002	1,176
Cadmium	0.2	117,647
Chromium	0.5	294,118
Cobalt	0.05	29,412
Copper	0.1	58,824
Iron	1	588,235
Lead	0.05	29,412
Magnesium	10	5,882,353
Manganese	1	588,235
Mercury	0.01	5,882
Nickel	0.1	58,824
Potassium	2	1,176,471
Selenium	0.2	117,647
Silver	0.01	5,882
Sulfate	(b)	(b)
Sodium	5	2,941,176
Thallium	0.1	58,824
Vanadium	0.05	29,412
Zinc	1	588,235
Soil Concentration Limits Based on Twice the OSHA Dust Limit (10 mg/m^3)		
Aluminum	5	500,000
Antimony	0.5	50,000
Arsenic	0.1 (a)	10,000 (a)
Barium	0.5	50,000
Beryllium	0.002	200
Cadmium	0.2	20,000
Chromium	0.5	50,000
Cobalt	0.05	5,000
Copper	0.1	10,000
Iron	1	100,000
Lead	0.05	5,000
Magnesium	10	1,000,000
Manganese	1	100,000
Mercury	0.01	1,000

Constituents	WAC/OSHA/NIOSH Permissible Air Exposure Limit (mg/m^3)	Occupational Concentration Limit for Soil Contamination (mg/kg)
Nickel	0.1	10,000
Potassium	2	200,000
Selenium	0.2	20,000
Silver	0.01	1,000
Sodium	5	500,000
Sulfate	(b)	(b)
Thallium	0.1	10,000
Vanadium	0.05	5,000
Zinc	1	100,000

(a) At this level, half-mask air purifying equipped with efficient filter or any half masked supplied air respirator is required, per CFR 29 1910.1018.

(b) Occupational limits not available in WAC OSHA, or NIOSH for this constituent.

APPENDIX I-2

ORGANIC OCCUPATIONAL CONSTITUENT LIMITS FOR SOIL CONCENTRATION FOR INHALATION PATHWAY

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Appendix I-2
Explanation of Volatilization Factor

The VF is a chemical specific value that was calculated using the following formula (EPA 1991):

$$VF(m^3/kg) = \frac{(LS \times V \times DH)}{A} \times \frac{(3.14 \times \alpha \times T)^{1/2}}{(2 \times D_{ei} \times E \times K_{as} \times 10^{-3}\ kg/g)}$$

where:

$$\alpha\ (cm^2/s) = \frac{(D_{ei} \times E)}{E + (p_s)(1-E)/K_{as}}$$

The following values were assumed in these calculations:

Parameters	Definition (units)	Assumed Hanford Specific Value
VF	volatization factor (m^3/kg)	-
LS	length of side of contaminated area (m)	50 m
V	wind speed in mixing zone (m/s)	3.3 m/s
DH	diffusion height (m)	2 m
A	area of contamination (cm^2)	25,000,000 cm^2
D_{ei}	effective diffusivity (cm^2/s)	$D_i \times E^{0.33}$
E	true soil porosity (unitless)	0.25
K_{as}	soil/air partition coefficient (g soil/cm^3 air)	$(H/K_d) \times 41$, where 41 is a units conversion factor
p_s	true soil density or particulate density (g/cm^3)	2.65 g/cm^3
T	exposure interval (s)	9.5×10^8 s
D_i	molecular diffusivity (cm^2/s)	chemical-specific
H	Henry's law constant (atm-m^3/mol)	chemical-specific
K_d	soil-water partition coefficient (cm^3/g)	$K_{oc} \times OC$
K_{oc}	organic carbon partition coefficient (cm^3/g)	chemical-specific
OC	organic carbon content of soil (fraction)	.01

Occupational Soil Concentration Limits for Organic Constituents

Constituent Type	Constituents	WAC/OSHA/ NIOSH Permissible Air Exposure Limits (mg/m^3)	Particulate Based Occupational Concentration Limit for Soil Contamination (mg/kg)	Volatilization Based Occupational Concentration Limit for Soil Contamination (mg/kg)	Volatilization Factor (m3/kg)
Soil Concentration Limits based on Maximum Dust Storm (1.7 mg/m^3)					
Volatile	Acetone	1800	1,058,823,529	113,303,414	62,946
	Benzene	3.25	1,911,765	82,960	25,526
	2-Butanone	590	347,058,824	49,439,713	83,796
	Carbon Disulfide	12	7,058,824	(c)	(c)
	Carbon Tetrachloride	12.6	7,411,765	15,983	1,269
	Chloroform	9.78	5,752,941	20,070	2,052
	1,2-Dichloroethene (total)	400	235,294,118	7,065,772	17,664
	Ethyl benzene	435	255,882,353	2,751,377	6,325
	2-Hexanone	20	11,764,706	203,324	10,166
	4-Methyl-2-Pentanone	205	120,588,235	(c)	(c)
	Methyl Chloride	105	61,764,706	568,678	5,416
	Tetrachloroethene	170	100,000,000	4,530,377	26,649
	Toluene	375	220,588,235	17,944,593	47,852
	Trichloroethene	270	158,823,529	7,004,964	25,944
	Vinyl Chloride	1.3 (a)	764,706 (a)	6,524	5,018
Semi-Volatiles	Acenaphthene (coal tar)	0.2	117,647	(d)	(d)
	Anthracene (coal tar)	0.2	117,647	(d)	(d)
	Aroclor-1248	0.5	294,118	(d)	(d)
	Aroclor-1254	0.5	294,118	(d)	(d)
	Aroclor-1260	0.5	294,118	(d)	(d)
	Benzo(a)anthracene (coal tar)	0.2	117,647	(d)	(d)
	Benzo(a)pyrene (coal tar)	0.2	117,647	(d)	(d)
	Benzo(b)fluoranthene (coal tar)	0.2	117,647	(d)	(d)
	Benzo(ghi)perylene (coal tar)	0.2	117,647	(d)	(d)

Constituent Type	Constituents	WAC/OSHA/ NIOSH Permissible Air Exposure Limits (mg/m^3)	Particulate Based Occupational Concentration Limit for Soil Contamination (mg/kg)	Volatilization Based Occupational Concentration Limit for Soil Contamination (mg/kg)	Volatilization Factor (m3/kg)
	Benzo(k)fluoranthene (coal tar)	0.2	117,647	(d)	(d)
	Benzoic Acid	0.2 (b)	117,647 (b)	(d)	(d)
	Bis(2-ethylhexhl)phthalate	5	2,941,176	(d)	(d)
	Butylbenzylphthalate	0.2 (b)	117,647 (b)	(d)	(d)
	Carbazole	0.2 (b)	117,647 (b)	(d)	(d)
	4-Chloro-3-Methylphenol	0.2 (b)	117,647 (b)	(d)	(d)
	2-Chlorophenol	0.2 (b)	117,647 (b)	(d)	(d)
	4-Chloroaniline	0.2 (b)	117,647 (b)	(d)	(d)
	Chrysene (coal tar)	0.2	117,647	(d)	(d)
	Di-n-octyl-phthalate	0.2 (b)	117,647 (b)	(d)	(d)
	Di-n-butyl-phthalate	0.2 (b)	117,647 (b)	(d)	(d)
	Dibenzo(a,h)anthracene	0.2 (b)	117,647 (b)	(d)	(d)
	Dibenzofuran	0.2 (b)	117,647 (b)	(d)	(d)
	1,2 Dichlorobenzene	300	176,470,588	(d)	(d)
	1,4 Dichlorobenzene	450	264,705,882	(d)	(d)
	Diethylphthalate	5	2,941,176	(d)	(d)
	Fluoranthene (coal tar)	0.2	117,647	(d)	(d)
	Fluoren (coal tar)	0.2	117,647	(d)	(d)
	Indeno(1,2,3-cd)pyrene	0.1	58,824	(d)	(d)
	2-Methylnaphthalene (coal tar)	0.2	117,647	(d)	(d)
	4-Methyphenol - cresol	22	12,941,176	(d)	(d)
	Naphthalene	50	29,411,765	(d)	(d)
	2-Nitrophenol	0.2 (b)	117,647 (b)	(d)	(d)
	N-Nitrosodiphenylamine	0.001	588	(d)	(d)
	Pentachlorophenol	0.5	294,118	(d)	(d)
	Phenathrene (coal tar)	0.2	117,647	(d)	(d)
	Phenol	19	11,176,471	(d)	(d)

Constituent Type	Constituents	WAC/OSHA/ NIOSH Permissible Air Exposure Limits (mg/m^3)	Particulate Based Occupational Concentration Limit for Soil Contamination (mg/kg)	Volatilization Based Occupational Concentration Limit for Soil Contamination (mg/kg)	Volatilization Factor (m3/kg)
	Pyrene (coal tar)	0.2	117,647	(d)	(d)
Pesticides	2,4-D	10	5,882,353	(d)	(d)
	4,4'DDD	0.2 (b)	117,647 (b)	(d)	(d)
	4,4'DDE	0.2 (b)	117,647 (b)	(d)	(d)
	Aldrin	0.25	147,059	(d)	(d)
	Beta-BHC - Lindane	0.5	294,118	(d)	(d)
	Dieldrin	0.25	147,059	(d)	(d)
	Endrin	0.1	58,824	(d)	(d)
	gamma-Chlordane	0.5	294,118	(d)	(d)
	Heptachlor	0.5	294,118	(d)	(d)
Soil Concentration Limits based on Twice the OHSA Dust Limit (10 mg/m^3)					
Volatile	Acetone	1800	180,000,000	113,303,414	62,946
	Benzene	3.25	325,000	82,960	25,526
	2-Butanone	590	59,000,000	49,439,713	83,796
	Carbon Disulfide	12	1,200,000	(c)	(c)
	Carbon Tetrachloride	12.6	1,260,000	15,983	1,269
	Chloroform	9.78	978,000	20,070	2,052
	1,2-Dichloroethene (total)	400	40,000,000	7,065,772	17,664
	Ethyl benzene	435	43,500,000	2,751,377	6,325
	2-Hexanone	20	2,000,000	203,324	10,166
	4-Methyl-2-Pentanone	205	20,500,000	(c)	(c)
	Methyl Chloride	105	10,500,000	568,678	5,416
	Tetrachloroethene	170	17,000,000	4,530,377	26,649
	Toluene	375	37,500,000	17,944,593	47,852
	Trichloroethene	270	27,000,000	7,004,964	25,944
	Vinyl Chloride	1.3 (a)	130,000 (a)	6,524	5,018

Constituent Type	Constituents	WAC/OSHA/ NIOSH Permissible Air Exposure Limits (mg/m^3)	Particulate Based Occupational Concentration Limit for Soil Contamination (mg/kg)	Volatilization Based Occupational Concentration Limit for Soil Contamination (mg/kg)	Volatilization Factor (m3/kg)
Semi-Volatiles	Acenaphthene	0.2	20,000	(d)	(d)
	Anthracene (coal tar)	0.2	20,000	(d)	(d)
	Aroclor-1248	0.5	50,000	(d)	(d)
	Aroclor-1254	0.5	50,000	(d)	(d)
	Aroclor-1260	0.5	50,000	(d)	(d)
	Benzo(a)anthracene (coal tar)	0.2	20,000	(d)	(d)
	Benzo(a)pyrene (coal tar)	0.2	20,000	(d)	(d)
	Benzo(b)fluoranthene (coal tar)	0.2	20,000	(d)	(d)
	Benzo(ghi)perylene (coal tar)	0.2	20,000	(d)	(d)
	Benzo(k)fluoranthene (coal tar)	0.2	20,000	(d)	(d)
	Benzoic Acid	0.2 (b)	20,000 (b)	(d)	(d)
	Bis(2-ethylhexhl)phthalate	5	500,000	(d)	(d)
	Butylbenzylphthalate	0.2 (b)	20,000 (b)	(d)	(d)
	Carbazole	0.2 (b)	20,000 (b)	(d)	(d)
	4-Chloro-3-Methylphenol	0.2 (b)	20,000 (b)	(d)	(d)
	2-Chlorophenol	0.2 (b)	20,000 (b)	(d)	(d)
	4-Chloroaniline	0.2 (b)	20,000 (b)	(d)	(d)
	Chrysene - coal tar	0.2	20,000	(d)	(d)
	Di-n-octyl-phthalate	0.2 (b)	20,000 (b)	(d)	(d)
	Di-n-butyl-phthalate	0.2 (b)	20,000 (b)	(d)	(d)
	Dibenzo(a,h)anthracene	0.2 (b)	20,000 (b)	(d)	(d)
	Dibenzofuran	0.2 (b)	20,000 (b)	(d)	(d)
	1,2 Dichlorobenzene	300	30,000,000	(d)	(d)
	1,4 Dichlorobenzene	450	45,000,000	(d)	(d)
	Diethylphthalate	5	500,000	(d)	(d)
	Fluoranthene (coal tar)	0.2	20,000	(d)	(d)
	Fluorene (coal tar)	0.2	20,000	(d)	(d)
	Indeno(1,2,3-cd)pyrene	0.1	10,000	(d)	(d)

Constituent Type	Constituents	WAC/OSHA/ NIOSH Permissible Air Exposure Limits (mg/m^3)	Particulate Based Occupational Concentration Limit for Soil Contamination (mg/kg)	Volatilization Based Occupational Concentration Limit for Soil Contamination (mg/kg)	Volatilization Factor (m3/kg)
	2-Methylnaphthalene (coal tar)	0.2	20,000	(d)	(d)
	4-Methyphenol - cresol	22	2,200,000	(d)	(d)
	Naphthalene	50	5,000,000	(d)	(d)
	2-Nitrophenol	0.2 (b)	20,000 (b)	(d)	(d)
	N-Nitrosodiphenylamine	0.001	100	(d)	(d)
	Pentachlorophenol	0.5	50,000	(d)	(d)
	Phenathrene (coal tar)	0.2	20,000	(d)	(d)
	Phenol	19	1,900,000	(d)	(d)
	Pyrene (coal tar)	0.2	20,000	(d)	(d)
Pesticides	2,4-D	10	1,000,000	(d)	(d)
	4,4'DDD	0.2 (b)	20,000 (b)	(d)	(d)
	4,4'DDE	0.2 (b)	20,000 (b)	(d)	(d)
	Aldrin	0.25	25,000	(d)	(d)
	Beta-BHC - Lindane	0.5	50,000	(d)	(d)
	Dieldrin	0.25	25,000	(d)	(d)
	Endrin	0.1	10,000	(d)	(d)
	gamma-Chlordane	0.5	50,000	(d)	(d)
	Heptachlor	0.5	50,000	(d)	(d)

(a) At this level, any chemical cartridge respirator with an organic vapor cartridge which provides a service life of at least 1 hour for concentrations of vinyl chloride up to 10 ppm, is required, per CFR 29 1910.1017.

(b) Occupational limits not available in WAC OSHA, or NIOSH for this constituent. Permissible Limit was assumed to be similiar to Pyrene (coal tar).

(c) Volatilization limits not available for this constituent.

(d) Volatilization based soil concentration limit not applicable for this constituent.

APPENDIX I-3

RADIONUCLIDE OCCUPATIONAL CONSTITUENT LIMITS FOR SOIL CONCENTRATION FOR INHALATION PATHWAY

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Radionuclide Soil Concentrations Associated with DOE Order 5480.11 Dose Limits via Inhalation (pCi/g)

Given:	Annual exposure time = 1250 hr/yr		
	Mass Loading factor = 1E+04 ug/m3		
	Inhalation rate = 1.2 m3/hr		
	Assumption that the relative concentration of radionuclides in airborne dust is equal to relative concentration of radionuclides in soil (i.e., radionuclides do not concentrate in fine fraction of soil)		
Radionuclide	DAC (a) (uCi/mL)	Time Adjusted (1250 hr/yr) DAC (uCi/mL)	Soil Concentration (pCi/g) (b)
Am-241	2E-12	3E-12	3E+02
Be-7	8E-06	1E-05	1E+09
C-14	1E-06	2E-06	2E+08
Cs-134	4E-08	6E-08	6E+06
Cs-137	7E-08	1E-07	1E+07
Cr-51	8E-06	1E-05	1E+09
Co-58	3E-07	5E-07	5E+07
Co-60	1E-08	2E-08	2E+06
Eu-152	1E-08	2E-08	2E+06
Eu-154	8E-09	1E-08	1E+06
Eu-155	4E-08	6E-08	6E+06
Gross Alpha			
Gross Beta			
Pu-238	3E-12	5E-12	5E+02
Pu-239	2E-12	3E-12	3E+02
Pu-240	2E-12	3E-12	3E+02
K-40	2E-07	3E-07	3E+07 (c)
Ra-226	3E-10	5E-10	5E+04
Na-22	3E-07	5E-07	5E+07
Sr-90	2E-09	3E-09	3E+05
Tc-99	3E-07	5E-07	5E+07
Th-228	4E-12	6E-12	6E+02
Th-232	5E-13	8E-13	8E+01
U (total)			
U-233	2E-11	3E-11	3E+03
U-234	2E-11	3E-11	3E+03
U-235	2E-11	3E-11	3E+03
U-238	2E-11	3E-11	3E+03

(a) Derived Air Concentrations (DAC) from Attachment 1 of DOE Order 5480.11, based on an inhalation rate of 1.2 m3/hr for 2,000 working hr/yr. When more than one DAC is given, the smallest value was used.

(b) Values are based on either a stochastic dose limit of 5 rem or a nonstochastic dose limit of 50 rem, whichever is more limiting (see DOE Order 5480.11).

(c) Soil concentration exceeds the specific activity of K-40 (7.0E+06 pCi/g).

Note: Dose-based concentrations would result in a person absorbing a dose of 5 rem (whole body) or 50 rem (single organ) over a 50 year period. The dose limit would not necessarily be achieved during the year of exposure.

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APPENDIX J

EXTERNAL DOSES FOR RADIONUCLIDE CONSTITUENTS IN WASTE VOLUME

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Radionuclide Soil Concentrations Associated with Various
Annual Dose Limits via External Exposure (pCi/g)

Given:	Annual exposure time of 1250 hr/yr (5 hr/d, 5 d/wk, 50 wk/yr)				
	Infinite source geometry				
	Soil density = 1.6 g/cm3				
Radionuclide	Primary Gamma Emitting Progeny (if applicable)	Dose Coefficient (a) [(Sv/s)/(Bq/m3)]	Dose Coefficient (continuous exposure) [(mrem/yr)/(pCi/g)]	Dose Coefficient (occupational exposure) [(mrem/yr)/(pCi/g)]	inverse [(pCi/g)/(mrem/yr)]
Am-241		2.34E-19	4.37E-02	6.24E-03	1.60E+02
Be-7		1.54E-18	2.88E-01	4.10E-02	2.44E+01
C-14		7.20E-23	1.34E-05	1.92E-06	5.21E+05
Cs-134		5.07E-17	9.47E+00	1.35E+00	7.40E-01
Cs-137	Ba-137m	1.93E-17	3.61E+00	5.14E-01	1.94E+00
Cr-51		9.34E-19	1.74E-01	2.49E-02	4.02E+01
Co-58		3.19E-17	5.96E+00	8.50E-01	1.18E+00
Co-60		8.68E-17	1.62E+01	2.31E+00	4.32E-01
Eu-152		3.75E-17	7.01E+00	1.00E+00	1.00E+00
Eu-154		4.11E-17	7.68E+00	1.10E+00	9.13E-01
Eu-155		9.75E-19	1.82E-01	2.60E-02	3.85E+01
Gross Alpha					
Gross Beta					
Pu-238		8.10E-22	1.51E-04	2.16E-05	4.63E+04
Pu-239		1.58E-21	2.95E-04	4.21E-05	2.37E+04
Pu-240		7.85E-22	1.47E-04	2.09E-05	4.78E+04
K-40		5.57E-18	1.04E+00	1.48E-01	6.74E+00
Ra-226	Pb-214, Bi-214	5.99E-17	1.12E+01	1.60E+00	6.26E-01
Na-22		7.32E-17	1.37E+01	1.95E+00	5.13E-01
Sr-90	Y-90	1.32E-19	2.47E-02	3.52E-03	2.84E+02
Tc-99		6.72E-22	1.26E-04	1.79E-05	5.58E+04
Th-228	Pb-212, Bi-212, Tl-208 (36%)	5.44E-17	1.02E+01	1.45E+00	6.90E-01
Th-232		2.79E-21	5.21E-04	7.44E-05	1.34E+04
U (total)					
U-233		7.48E-21	1.40E-03	1.99E-04	5.02E+03
U-234		2.15E-21	1.40E-03	1.99E-04	5.02E+03
U-235		3.86E-18	7.21E-01	1.03E-01	9.72E+00
U-238	Th-234, Pa-234m	6.10E-19	1.14E-01	1.63E-02	6.15E+01

Radionuclide Soil Concentrations Associated with Various Annual Dose Limits via External Exposure (pCi/g)

	Dose Based Concentration (pCi/g)			
	given the following annual dose limits:			
Radionuclide	50 mrem/yr	100 mrem/yr	250 mrem/yr	5 rem/yr
Am-241	8E+03	2E+04	4E+04	8E+05
Be-7	1E+03	2E+03	6E+03	1E+05
C-14	3E+07	5E+07	1E+08	3E+09
Cs-134	4E+01	7E+01	2E+02	4E+03
Cs-137	1E+02	2E+02	5E+02	1E+04
Cr-51	2E+03	4E+03	1E+04	2E+05
Co-58	6E+01	1E+02	3E+02	6E+03
Co-60	2E+01	4E+01	1E+02	2E+03
Eu-152	5E+01	1E+02	3E+02	5E+03
Eu-154	5E+01	9E+01	2E+02	5E+03
Eu-155	2E+03	4E+03	1E+04	2E+05
Gross Alpha				
Gross Beta				
Pu-238	2E+06	5E+06	1E+07	2E+08
Pu-239	1E+06	2E+06	6E+06	1E+08
Pu-240	2E+06	5E+06	1E+07	2E+08
K-40	3E+02	7E+02	2E+03	3E+04
Ra-226	3E+01	6E+01	2E+02	3E+03
Na-22	3E+01	5E+01	1E+02	3E+03
Sr-90	1E+04	3E+04	7E+04	1E+06
Tc-99	3E+06	6E+06	1E+07	3E+08
Th-228	3E+01	7E+01	2E+02	3E+03
Th-232	7E+05	1E+06	3E+06	7E+07 (b)
U (total)				
U-233	3E+05	5E+05	1E+06	3E+07
U-234	3E+05	5E+05	1E+06	3E+07
U-235	5E+02	1E+03	2E+03	5E+04
U-238	3E+03	6E+03	2E+04	3E+05

Radionuclide Soil Concentrations Associated with Various
Annual Dose Limits via External Exposure (pCi/g)

Dose Coefficients attributable to progeny (only progeny that are					
relatively significant contributors to external exposure are listed):					
		Dose Coeff.			
Parent:	Ra-226	1.70E-19			
Progeny:	Pb-214	7.18E-18			
	Bi-214	5.25E-17			
	Total =	5.99E-17			
Parent:	Th-228	4.25E-20			
Progeny:	Pb-212	3.77E-18			
	Bi-212	6.27E-18			
	Tl-208 (36%)	4.43E-17	(= 1.23E-16 * 0.36)		
	Total =	5.44E-17			
Parent:	U-238	5.52E-22			
Progeny:	Th-234	1.29E-19			
	Pa-234m	4.80E-19			
	Total =	6.10E-19			
Parent:	Sr-90	3.77E-21			
Progeny:	Y-90	1.28E-19			
	Total =	1.32E-19			
Parent:	Cs-137	4.02E-21			
Progeny:	Ba-137m	1.93E-17			
	Total =	1.93E-17			
(a) Source of dose coefficients is EPA 402-R-93-081 (Federal Guidance Report No. 12, Sept. 1993), Table III.7.					
(b) Soil concentration exceeds the specific activity of Th-232 (1.1E+05 pCi/g).					

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APPENDIX K

CONTAMINATED VOLUME RADIOLOGICAL DOSE CONCENTRATION FOR THE NON-BURIAL GROUND SAMPLED WASTE SITES

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Contaminated Volumes for Sampled Waste Sites

Site Identification With Depth of Sample Collection	Amount of Radionuclide Contamination (mrem/yr) (a)	Site Dimensions Length (ft)	Width (ft)	Interval Depth (ft)	Volume for Interval (bft3)	Total Contaminated Volume for Waste Site (bft3)	Total Contaminated Volume for Intervals Over 250 mrem/yr (a) (bft3)	Percent of Volume Over 250 mrem/yr (a) (%)	Total Contaminated Volume for Intervals Over 1 rem/yr (a) (bft3)	Percent of Volume Over 1 rem/yr (a) (%)
Operable Unit 100-BC-1										
116-B-1										
15.0 - 17.5	150.0	200.0	30.0	2.5	15,000.0	206,853.0	0.0		0.0	
17.5 - 20.0	70.0	200.0	30.0	2.5	15,000.0	206,853.0	0.0		0.0	
20.0 - 22.5	25.0	200.0	30.0	2.5	15,000.0	206,853.0	0.0		0.0	
							0.0	0.0	0.0	0.0
116-B-2										
10.0 - 12.5	55.0	75.0	10.0	2.5	1,875.0	130,083.0	0.0		0.0	
							0.0	0.0	0.0	0.0
116-B-3										
0.0 - 10.0	40.0	10.0	10.0	10.0	1,000.0	2,625.0	0.0		0.0	
							0.0	0.0	0.0	0.0
116-C-5 (area outside of west basin contaminated by leakage from basin)										
0.0 - 10.0	15.0	Unknown					Unknown - minimal contamination			
116-C-5 (sludge samples inside basins)										
West	6,300.0	330 Dia		3.0	256,459.5	15,797,367.0	256,459.5		256,459.5	
East	6,785.0	330 Dia		3.0	256,459.5	15,797,367.0	256,459.5		256,459.5	
							512,919.0	3.2	512,919.0	3.2
Operable Unit 100-DR-1										
116-D-1A										
0.0 - 10.0	25.0	130.0	10.0	10.0	13,000.0	69,899.0	0.0		0.0	
10.0 - 15.0	10.0	130.0	10.0	5.0	6,500.0	69,899.0	0.0		0.0	
15.0 - 20.0	230.0	130.0	10.0	5.0	6,500.0	69,899.0	0.0		0.0	
20.0 - 25.0	200.0	130.0	10.0	5.0	6,500.0	69,899.0	0.0		0.0	
25.0 - 30.0	330.0	130.0	10.0	5.0	6,500.0	69,899.0	6,500.0		0.0	
30.0 - 35.0	150.0	130.0	10.0	5.0	6,500.0	69,899.0	0.0		0.0	
40.0 - 45.0	145.0	130.0	10.0	5.0	6,500.0	69,899.0	0.0		0.0	
45.0 - 50.0	145.0	130.0	10.0	5.0	6,500.0	69,899.0	0.0		0.0	
							6,500.0	9.3	0.0	0.0

Contaminated Volumes for Sampled Waste Sites

Site Identification With Depth of Sample Collection	Amount of Radionuclide Contamination (mrem/yr) (a)	Site Dimensions Length (ft)	Site Dimensions Width (ft)	Interval Depth (ft)	Volume for Interval (bft3)	Total Contaminated Volume for Waste Site (bft3)	Total Contaminated Volume for Intervals Over 250 mrem/yr (a) (bft3)	Percent of Volume Over 250 mrem/yr (a) (%)	Total Contaminated Volume for Intervals Over 1 rem/yr (a) (bft3)	Percent of Volume Over 1 rem/yr (a) (%)
116-D-1B										
12.5 - 15.0	385.0	100.0	10.0	2.5	2,500.0	31,667.0	2,500.0		0.0	
15.0 - 17.5	470.0	100.0	10.0	2.5	2,500.0	31,667.0	2,500.0		0.0	
17.5 - 20.0	235.0	100.0	10.0	2.5	2,500.0	31,667.0	0.0		0.0	
							5,000.0	15.8	0.0	0.0
116-DR-1										
12.5 - 15.0	455.0	300.0	15.0	2.5	11,250.0	139,577.0	11,250.0		0.0	
15.0 - 17.5	455.0	300.0	15.0	2.5	11,250.0	139,577.0	11,250.0		0.0	
17.5 - 20.0	25.0	300.0	15.0	2.5	11,250.0	139,577.0	0.0		0.0	
20.0 - 22.5	25.0	300.0	15.0	2.5	11,250.0	139,577.0	0.0		0.0	
							22,500.0	16.1	0.0	0.0
116-DR-2										
12.5 - 15.0	140.0	150.0	10.0	2.5	3,750.0	72,497.0	0.0		0.0	
15.0 - 17.5	140.0	150.0	10.0	2.5	3,750.0	72,497.0	0.0		0.0	
17.5 - 20.0	100.0	150.0	10.0	2.5	3,750.0	72,497.0	0.0		0.0	
20.0 - 22.5	100.0	150.0	10.0	2.5	3,750.0	72,497.0	0.0		0.0	
							0.0	0.0	0.0	0.0
116-D-2										
10.0 - 12.5	75.0	10.0	10.0	2.5	250.0	2,625.0	0.0		0.0	
12.5 - 15.0	75.0	10.0	10.0	2.5	250.0	2,625.0	0.0		0.0	
15.0 - 17.5	10.0	10.0	10.0	2.5	250.0	2,625.0	0.0		0.0	
							0.0	0.0	0.0	0.0
103-D										
Wipe Samples	2770 pCi/g	Units given inconsistent with a wipe samples								

Contaminated Volumes for Sampled Waste Sites

Site Identification With Depth of Sample Collection	Amount of Radionuclide Contamination (mrem/yr) (a)	Site Dimensions Length (ft)	Width (ft)	Interval Depth (ft)	Volume for Interval (bft3)	Total Contaminated Volume for Waste Site (bft3)	Total Contaminated Volume for Intervals Over 250 mrem/yr (a) (bft3)	Percent of Volume Over 250 mrem/yr (a) (%)	Total Contaminated Volume for Intervals Over 1 rem/yr (a) (bft3)	Percent of Volume Over 1 rem/yr (a) (%)
Operable Unit 100-HR-1										
116-H-1										
10.0 - 12.5	75.0	200.0	25.0	2.5	12,500.0	134,067.0	0.0		0.0	
12.5 - 15.0	50.0	200.0	25.0	2.5	12,500.0	134,067.0	0.0		0.0	
15.0 - 17.5	55.0	200.0	25.0	2.5	12,500.0	134,067.0	0.0		0.0	
17.5 - 20.0	50.0	200.0	25.0	2.5	12,500.0	134,067.0	0.0		0.0	
							0.0	0.0	0.0	0.0
116-H-7										
5.0 - 10.0	415.0	600.0	273.0	5.0	819,000.0	15,415,274.0	819,000.0		0.0	
10.0 - 15.0	415.0	600.0	273.0	5.0	819,000.0	15,415,274.0	819,000.0		0.0	
							1,638,000.0	10.6	0.0	0.0
Operable Unit 100-NR-1										
116-N-2										
0.0 - 6.0	250.0	10.0	10.0	6.0	600.0	2,625.0	600.0		0.0	
6.0 - 15.0	10.0	10.0	10.0	9.0	900.0	2,625.0	0.0		0.0	
							600.0	22.9	0.0	0.0
UPR-100-N-4 &UPR-100-N-8										
0.0 - 6.0	15.0	40.0	40.0	6.0	9,600.0	10,905.0	0.0		0.0	
							0.0	0.0		0.0
Operable Unit 300-FF-1										
316-1										
0.0 - 2.5	230.0	600.0	375.0	2.5	562,500.0	6,064,975.0	0.0		0.0	
2.5 - 5.0	50.0	600.0	375.0	2.5	562,500.0	6,064,975.0	0.0		0.0	
5.0 - 10.0	20.0	600.0	375.0	5.0	1,125,000.0	6,064,975.0	0.0		0.0	
							0.0	0.0	0.0	0.0
316-5 (c)										
5.0 - 10.0	10.0	10.0	1,685.0	5.0	84,250.0	641,167.0	0.0		0.0	
							0.0	0.0	0.0	0.0

Contaminated Volumes for Sampled Waste Sites

Site Identification With Depth of Sample Collection	Amount of Radionuclide Contamination (mrem/yr) (a)	Site Dimensions Length (ft)	Width (ft)	Interval Depth (ft)	Volume for Interval (bft3)	Total Contaminated Volume for Waste Site (bft3)	Total Contaminated Volume for Intervals Over 250 mrem/yr (a) (bft3)	Percent of Volume Over 250 mrem/yr (a) (%)	Total Contaminated Volume for Intervals Over 1 rem/yr (a) (bft3)	Percent of Volume Over 1 rem/yr (a) (%)
316-2										
2.5 - 5.0	65.0	620.0	600.0	2.5	930,000.0	8,243,190.0	0.0		0.0	
							0.0	0.0	0.0	0.0
618-4										
0.0 - 2.5	30.0	570.0	220.0	2.5	313,500.0	1,881,000.0	0.0		0.0	
2.5 - 5.0	35.0	570.0	220.0	2.5	313,500.0	1,881,000.0	0.0		0.0	
5.0 - 10.0	30.0	570.0	220.0	5.0	627,000.0	1,881,000.0	0.0		0.0	
							0.0	0.0	0.0	0.0

(a) This measurement is based on working 5 hr/d, 5 d/wk, 50 wk/yr

(b) The dimensions for this units are estimated

(c) The volumes for 316-5 includes both the east and west process trenches

APPENDIX L

105-B (WIDS SITE 118-B-1) BURIAL GROUND LOG SUMMARY

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105-B (Site 116-C-5) Burial Ground Log Summary

GENERAL MATERIAL	SPECIFIC MATERIAL	AMOUNT	UNITS	DESCRIPTION OF SIZE OR UNIT WIEGHT
Aluminum	Perforated Aluminum (PA)	87475	pieces	6"-8" pieces, 1 bucket = 110 pieces
	Solid Aluminum (SA)	67737	pieces	1 piece = 1.4 pounds, 1 bucket = 110 pieces
	Perforated Spacers	208725	pieces	8" long, 1.4 " diameter, 1piece = 0.5 pounds
	Unknown Aluminum Dummies	153038	pieces	Per inventory by T. Ross, Douglas United Nuclear, Inc.
Poison	Poison: Lead Cadmium Rods (P)	7215	length	6" long, 1.4" diameter, 1 piece =3.36 pounds
Lead	bricks	20441	each	6" pieces, 25 pounds
	peices	348	each	
	Weighing Tray	2	each	
Dummies	Wood	105	pieces	
	Lead	41347	pieces	364 pieces = 1,300 pounds
	Steel	6540	pieces	
Vertical Safety Rod (VSR)	Guides	13	each	unknown, made of boron
	Tips	13	each	unknown, made of boron
	Rods	36	each	unknown, made of boron
Horizontal Control Rod (HCR)	Rods	17	each	unknown, made of boron
Hardware, Activated	Gun Barrels	26	each	7.6' long, 2" diameter
	Stringers	18	each	
	Ruptured Slug Cans	12	each	
Pipes and Tubes	Short	3187	piece	
	Long (Process Tubes)	4890	piece	40' but chopped into 3'-5' lengths, 1.9" diameter
	Misc. Sections	6521	buckets	
	Stainless Steel Pipe	1	lot	One lot from ball X
	Shield Plug	1	each	
	Nozzels	4061	each	
	Valves	17	each	
	joints, elbows, flanges	3	each	
Underwater	Chamber	9	each	
	Scoop, light, mirror, etc.	8	each	
Tools	Misc Hand Tools	23	each	Shovels, jacks, chain falls, drill bits, clevis, etc.
	Saw Horses	12	each	
	Papoose Cutter	1	each	
	Papoose Breaker	1	each	
	Scaffolding	5	each	
	Tongs	4	pair	
	Ladder	5	each	
Contaminated Equip.	Viewer		each	

105-B (Site 116-C-5) Burial Ground Log Summary

GENERAL MATERIAL	SPECIFIC MATERIAL	AMOUNT	UNITS	DESCRIPTION OF SIZE OR UNIT WIEGHT
Contaminated Equip.	Table	1	each	
	Tube Box		each	
	Buckets	24	each	
	Chute Boxes		each	
	Dummie Train	3	each	Westinghouse
	Segmental Discharge Equipment	2	lot	
	Pumps	14	each	
	Signs	1	lot	
	Waste Can	2	each	
	Iron Gates	8	each	
	Iron Stairs	2	each	10'
	Railings	1	each	
	Pig Tails	3	each	2 pounds each, about 4,000 in a batch?
	Hook	1	each	
	Special Attachment/Machine Parts	3	each	
	Cords and Chains	11	roll	
	Cable	2	roll	
	Ductwork	1	unit	
	Scales	1	each	
	Dryers/blowers	4	each	
	Thimble Carrier	1	each	
	Electric Space Heater	1	each	
	Yokes	1	stack	
Miscellaneous	Plywood, Posts, Lumber, Etc.	10	lot	unknown-objects may vary
	Metal Sections		each	
	Scrap Metal	1	lot	
	Steel Angle	4	each	
	Steel Plate	6	each	
	Bolts	18	Buckets	
	Basin Scraps	1	unit	
	Ropes and Hoses	7	rolls	
	Conduit		length	
	Concrete Block		unknown	
	Mattress Plates	15	each	
	Tarps	1	each	
	Flooring	74	square feet	
Soil	Contaminated	18	loads	
Trash	Miscellaneous	227	boxes	cardboard cartons or buckets or cubic yards
				(Assumes 150 cartons on 3 truckloads)

APPENDIX M

105-B (WIDS SITE 118-B-1) BURIAL GROUND CONTAMINATED VOLUME

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Appendix M. Burial Ground Volumes For 118-B-1 (alias 105-B)

Amount of Radionuclide Contamination (mrem/hr)	Number of Readings Over Dose Level (%)	Percent of Readings Over Dose Level (%)	Estimated Volume of Material Over Dose	Annual Dose if Continuous Exposure (rem/yr)
1	302	100.00	2,378,174	1
5	262	86.75	2,063,184	6
10	213	70.53	1,677,321	13
50	104	34.44	818,974	63
100	95	31.46	748,101	125
500	61	20.20	480,360	625
1,000	45	14.90	354,364	1,250
2,000	26	8.61	204,743	2,500
5,000	9	2.98	70,873	6,250
10,000	2	0.66	15,749	12,500
90,000	1	0.33	7,875	112,500
Total volume of site = 7,464,447 ft^3				
Contaminated Volume = 2,378,174 ft^3				
Total Readings Recorded in the Burial Ground Logs = 302				

The 108-B burial ground logs provide radiological reading levels observed during placement of waste into the trenches. The total number of readings recorded in the 108-B burial ground logs is 302. The burial ground volumes were categorized into dose ranges that are listed in column 1. The number of readings at or above these levels are listed in column 2. The percentages of materials over the recorded readings were determined by dividing the number of readings over the dose level by the total number of readings. The volumes were calculated by multiplying the percent of readings in each dose interval by the total contaminated volume.

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APPENDIX N

LEACHATE CONCENTRATION CALCULATIONS

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Appendix N. Anticipated Maximum Leachate Concentrations

Soil Constituent	Maximum Average Soil Conc.	Kd Calculated Maximum Leachate Conc.	Maximum Leachate Conc.	Overall Average Soil Conc.	Kd Calculated Overall Average Leachate Conc.	Average Leachate Conc.	Part. Coef. Kd (a)	Solubility (a)
Inorganic	**(ug/kg)**	**(ug/l)**	**(ug/l)**	**(ug/kg)**	**(ug/l)**	**(ug/l)**	**(l/kg)**	**(ug/l)**
Aluminum	20,470,500	1,022,094	1,000	3,708,000	185,141	1,000	20	1,000
Antimony	18,600	664,286	664,286	272	9,714	9,714	0	1,000,000
Arsenic	11,800	421,429	421,429	3,155	112,679	112,679	0	1,000,000
Barium	3,095,000	61,865	1,000	92,220	1,843	1,000	50	1,000
Beryllium	900	45	45	52	3	3	20	1,000
Cadmium	25,500	1,107	1,107	329	14	14	23	25,000
Chromium	1,765,000	63,035,714	1,000,000	37,700	1,346,429	1,000,000	0	1,000,000
Cobalt	12,200	406	406	5,074	169	169	30	25,000
Copper	2,853,700	123,923	25,000	521,300	22,638	22,638	23	25,000
Iron	98,316,700	2,806,803	1,000	7,692,000	219,596	1,000	35	1,000
Lead	250,000	8,326	1,000	50,000	1,665	1,000	30	1,000
Magnesium	3,630,000	181,246	25,000	905,000	45,187	25,000	20	25,000
Manganese	462,000	13,189	1,000	219,000	6,252	1,000	35	1,000
Mercury	35,550	1,184	1,000	1,200	40	40	30	1,000
Nickel	83,100	3,609	3,609	21,600	938	938	23	25,000
Potassium	2,965,000	736,097	736,097	112,000	27,805	27,805	4	1,000,000
Selenium	3,900	139,286	139,286	281	10,036	10,036	0	1,000,000
Silver	169,200	6,760	6,760	6,390	255	255	25	25,000
Sodium	274,000	90,489	90,489	19,000	6,275	6,275	3	1,000,000
Sulfate	5,670,000	2.03E+08	25,000	1,590	56,786	25,000	0	25,000
Thallium	4,500	90	90	1	0	0	50	1,000
Vanadium	119,000	2,379	2,379	17,900	358	358	50	25,000
Zinc	5,120,000	222,338	25,000	89,500	3,887	3,887	23	25,000
Organic	**(ug/kg)**	**(ug/l)**	**(ug/l)**	**(ug/kg)**	**(ug/L)**	**(ug/l)**	**(l/kg)**	**(ug/l)**
Acetone	2,800	100,000	100,000	2.25	80	80	0	1.00E+102
Benzene	190	406	406	0.01	0	0	0.44	1,800,000
2-Butanone	5	152	152	0.07	2	2	0.005	3.53E+08
Carbondisulfide	36	103	103	0.02	0	0	0.32	2,500,000
1,2-Dichloroethene (total)	0	0	0	0	0	0	0.21	600,000
4-Methyl-2-Pentanone	5	18	18	0.05	0	0	0.25	17,000,000
Methylene Chloride	18	85	85	0.6	3	3	0.18	20,000,000
Tetrachloroethene	29	26	26	0.91	1	1	1.1	830,000
Toluene	30	32	32	2.90	3	3	0.9	520,000
Trichloroethene	36	61	61	1.23	2	2	0.55	1,100,000
Vinyl Chloride	120	390	390	1.01	3	3	0.28	1,900,000
Acenaphthene	81	6	6	0.15	0	0	14	3,700
Aroclor-1248	159	0	0	23.7	0	0	2,200	50
Aroclor-1254	678	0	0	91.7	0	0	3,600	50
Aroclor-1260	600	0	0	0.54	0	0	12,000	80

Soil Constituent	Maximum Average Soil Conc.	Kd Calculated Maximum Leachate Conc.	Maximum Leachate Conc.	Overall Average Soil Conc.	Kd Calculated Overall Average Leachate Conc.	Average Leachate Conc.	Part. Coef. Kd (a)	Solubility (a)
Anthracene	6,300	90	75	2.24	0	0	70	75
Benzo(a)anthracene	900	0	0	3	0	0	6,000	5.7
Benzo(a)pyrene	470	0	0	1.74	0	0	15,000	4
Benzo(b)fluoranthene	1,200	0	0	3.85	0	0	3,800	1.2
Benzo(ghi)perylene	230	0	0	1.26	0	0	2,500	0.26
Benzo(k)fluoranthene	190	0	0	3.61	0	0	17,000	0.55
Benzoic Acid	850	30,357	30,357	1.80	64	64	0	2,900,000
Bis (2-ethylhexhl) phthalate	16,780	224	41	618	8	8	75	41
Butylbenzylphthalate	1,300	1,265	1,265	233	227	227	1	2,900
Carbazole	170	24	24	0.12	0	0	7	22,000
Carbon Tetrachloride	3	2	2	0.05	0	0	1.4	770,000
4-Chloro-3-Methylphenol	170	612	612	0.11	0	0	0.25	3,900,000
2-Chlorophenol	170	14	14	0.11	0	0	12	28,500,000
Chloroform	1	5	5	0.02	0	0	0.17	8,500,000
4-Chloroaniline	3,150	763	763	69.60	17	17	4.1	3,900,000
Chrysene	460	0	0	3.38	0	0	1,900	1.5
Di-n-octyl-phthalate	170	0	0	0.09	0	0	830	3,000
Di-n-butyl-phthalate	1,472	86	86	257.00	15	15	17	10,000
Dibenzofuran	60	2	2	0.00	0	0	28	10,000
1,3 Dichlorobenzene	170	111	111	0.10	0	0	1.5	69,000
1,4 Dichlorobenzene	170	84	84	0.11	0	0	2	49,000
Diethyl phthalate	170	104	104	0.66	0	0	1.6	760,000
Ethylbenzene	330	399	399	0.01	0	0	0.8	140,000
Fluoranthene	1,450	4	4	5.12	0	0	330	275
Fluorene	1,700	68	68	0.83	0	0	25	1,400
Indeno(1,2,3-cd)pyrene	240	2	2	1.20	0	0	100	62
2-Hexanone	0	0	0	0.0002	0	0	0.65	35,000,000
2-Methylnaphthalene	13,000	302	302	0.49	0	0	43	25,000
4-Methyphenol	500	274	274	11.10	6	6	1.8	19,000,000
Naphthalene	4,100	583	583	0.16	0	0	7	22,000
2-Nitrophenol	170	284	284	4.08	7	7	0.57	1,500,000
N-Nitrosodiphenylamine	37	6	6	0.68	0	0	6	35,000
Pentachlorophenol	850	47	47	11.20	1	1	18	17,000
Phenanthrene	2,500	21	21	0.81	0	0	120	1,100
Phenol	170	475	475	5.93	17	17	0.33	82,000,000
1,1,1-Trichloroethane	1	1	1	0.00002	0	0	0.65	1,700,000
Pyrene	1,350	22	22	12.10	0	0	60	140
Xylenes	1,300	4,088	4,088	0.05	0	0	0.29	150,000
2,4-D	1	2	2	0	0	0	0.39	540,000
4,4'DDD	6	0	0	0.002	0	0	410	50
4,4'DDE	41	0	0	0.90	0	0	250	55

Soil Constituent	Maximum Average Soil Conc.	Kd Calculated Maximum Leachate Conc.	Maximum Leachate Conc.	Overall Average Soil Conc.	Kd Calculated Overall Average Leachate Conc.	Average Leachate Conc.	Part. Coef. Kd (a)	Solubility (a)
Aldrin	4	0	0	0.002	0	0	71	105
Beta-BHC	4	0	0	0.002	0	0	15	5,000
Dieldrin	8	0	0	0.004	0	0	37	90
Endrin	8	0	0	0.01	0	0	170	130
gamma-Chlordane	9	0	0	0.0003	0	0	43	640
Heptachlor	4	0	0	0.003	0	0	150	100
Radionuclide	**(pCi/kg)**	**(pCi/l)**	**(pCi/l)**	**(pCi/kg)**	**(pCi/l)**	**(pCi/l)**	**(l/kg)**	**(pCi/l)**
Americium-241	15,600	78	78	850	4	4	200	3.43E+12
Beryllium-7	6,800	340	340	8	0	0	20	3.48E+17
Carbon-14	199,000	7,107,143	7,107,143	13,440	480,000	480,000	0	4.46E+15
Cesium-134	0	0	0	0	0	0	50	1.29E+18
Cesium-137	448,800	8,971	8,971	3,230	65	65	50	8.69E+16
Chromium-51	300	10,714	10,714	0.3	11	0	0	2.31E+18
Cobalt-58	3,500	70	70	10	0	0	50	2.16E+19
Cobalt-60	157,500	3,148	3,148	10,960	219	219	50	2.82E+16
Europium-152	925,300	4,626	4,626	74,300	371	371	200	4.59E+18
Europium-154	207,500	1,037	1,037	15,180	76	76	200	7.02E+18
Europium-155	18,000	90	90	1,090	5	5	200	1.24E+19
Plutonium-238	2,900	46	46	150	2	2	63	1.71E+13
Plutonium-239/240	62,200	987	987	3,290	52	52	63	6.21E+10
Potassium-40	16,000	3,182	3,182	7,210	1,434	1,434	5	2.27E+07
Radium-226	9,400	469	469	450	22	22	20	9.88E+14
Sodium-22	5,400	1,341	1,341	60	15	15	4	6.24E+18
Strontium-90	267,000	14,810	14,810	15,810	877	877	18	3.41E+15
Technetium-99	500	17,857	17,857	61	2,179	2,179	0	1.70E+13
Thorium-228	1,100	22	22	480	10	10	50	8.18E+14
Thorium-232	1,740	35	35	390	8	8	50	1.09E+05
Uranium-233/234	359,900	350,097	350,097	22,930	22,305	22,305	1	8.89E+06
Uranium-235	5,000	4,864	4,864	950	924	924	1	3.89E+05
Uranium-238	451,200	438,911	438,911	20,700	20,136	20,136	1	8.31E+06

a) Values from Preliminary Draft RI/FS for the ERDF, DOE/RL-93-99, 2/18/94. Data Referenced from Hazardous Substance Data Bank 1993, or from Groundwater Chemicals Desk Reference, Montgomery and Welkom, 1990.

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APPENDIX O

LINER MANUFACTURER'S DATA

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Table O-1. Chemical compatibility Data for HDPE Liners.

Constituent	Trade Name or Synonym	Manuf Rating	Source of Data	Test Conditions	Estimated Maximum Leachate Concentration
INORGANIC					
Aluminum		P	NSC, SLT	Saturated Solution	13.6 mg/l
Antimony		P	SLT	90% Concentraton	18.6 mg/l
Arsenic		P	SLT	Saturated Solution	3.6 mg/l
Barium		P	NSC, SLT	Saturated Solution	61.9 mg/l
Beryllium		P	NSC	(a)	0.9 mg/l
Cadmium		P	NSC	(a)	1.7 mg/l
Chromium		P	NSC	(a)	48.2 mg/l
Cobalt		P	NSC	(a)	1.2 mg/l
Copper		P	NSC, SLT	Saturated Solution	190.2 mg/l
Iron		P	NSC	(a)	4915.8 mg/l
Lead		P	NSC	(a)	8.3 mg/l
Magnesium		P	NSC, SLT	Saturated Solution	806.7 mg/l
Manganese		P	NSC	(a)	23.1 mg/l
Mercury		P	SLT	100% Concentration	35.6 mg/l
Nickel		P	SLT	Saturated Solution	5.5 mg/l
Potassium		P	SLT	Saturated Solutioin	539.1 mg/l
Selenium		-	-	-	3.9 mg/l
Silver		P	NSC, SLT	Saturated Solution	8.5 mg/l
Sodium		P	SLT	40% to Sat. Solution	91.3 mg/l
Sulfate		P	NSC	(b)	5670.0 mg/l
Thallium		P	NSC	(a)	3.0 mg/l
Vanadium		P	NSC	(a)	2.4 mg/l
Zinc		P	NSC, SLT	Saturated Solution	341.3 mg/l
ORGANIC					
Acetone		P	NSC	1000.0 mg/l (c)	973.2 mg/l
		L	SLT	100% conc.	
Benzene		P	NSC	100.0 mg/l (c)	0.3 mg/l
2-Butanone	Methyl ethyl ketone	P	NSC	1000.0 mg/l (c)	0.1 mg/l
Carbon disulfide		L	SLT	100% conc. @ 20 deg. C	0.1 mg/l
1,2-Dichloroethane		P	NSC	100.0 mg/l (c)	0.0 mg/l
		U	Poly-Flex	100% conc.	
4-methyl, 2-pentanone	Methyl isobutyl ketone	P	NSC	1000.0 mg/l (c)	< 0.1 mg/l
		L	Poly-Flex	100% conc.	
Methylene Chloride	Dichloromethane	P	NSC	100.0 mg/l (c)	0.2 mg/l
		L	SLT	100% conc.	
Tetrachloroethene		P	NSC	100.0 mg/l (c)	< 0.1 mg/l
Toluene	Methyl benzene	P	NSC	200.0 mg/l (c)	< 0.1 mg/l
		L	SLT	100% conc.	
Trichloroethene		P	NSC	100.0 mg/l (c)	< 0.1 mg/l
Vinyl Chloride	Chloroethylene	P	NSC	100.0 mg/l (c)	6.0 mg/l
Acenaphthene		P	NSC	200.0 mg/l (c)	< 0.1 mg/l
Polychlorinated biphenyls	Aroclor-1248	P	NSC	50.0 mg/l (c)	< 0.1 mg/l
Polychlorinated biphenyls	Aroclor-1254	P	NSC	50.0 mg/l (c)	< 0.1 mg/l
Polychlorinated biphenyls	Aroclor-1260	P	NSC	50.0 mg/l (c)	< 0.1 mg/l

Anthracene		P	NSC	200.0 mg/l (c)	< 0.1 mg/l
Benzo(a)anthracene		P	NSC	200.0 mg/l (c)	< 0.1 mg/l
Benzo(a)pyrene		P	NSC	200.0 mg/l (c)	< 0.1 mg/l
Benzo(b)flouranthene		P	NSC	50.0 mg/l (c)	< 0.1 mg/l
Benzo(g,h,i)perylene		P	NSC	200.0 mg/l (c)	< 0.1 mg/l
Benzo(k)fluoranthene		P	NSC	50.0 mg/l (c)	< 0.1 mg/l
Benzoic acid		P	SLT	Saturated Solution	2.3 mg/l
Bis (2-ethylhexhl) phthalate		P	NSC	200.0 mg/l (c)	< 0.1 mg/l
Butylbenzylphthalate		P	NSC	200.0 mg/l (c)	< 0.1 mg/l
Carbazole	Dibenzopyrrole	P	Poly-Flex	30 days exposure, no damag	< 0.1 mg/l
Carbon Tetrchloride		P	NSC	100.0 mg/l (c)	
		L	SLT	100% conc.	
4-Chloro-3-Methylphenol		-	-	-	< 0.1 mg/l
2-Chlorophenol		P	NSC	50.0 mg/l (c)	0.2 mg/l
Chloroform		P	NSC	100.0 mg/l (c)	< 0.1 mg/l
		U	SLT	100% conc.	
4-Chloroaniline	4-Chlororbenzenamine	-	-	-	9.3 mg/l
Chrysene		P	NSC	200.0 mg/l (c)	< 0.1 mg/l
Di-n-octyl-phthalate	bis(2-ethytlhexyl)phthalat	P	NSC	200.0 mg/l (c)	
Di-n-butyl-phthalate	Dibutylphthalate	P	NSC	200.0 mg/l (c)	< 0.1 mg/l
Dibenzofuran	Diphenylene oxide	-	-	-	< 0.1 mg/l
1,3 Dichlorobenzene	o-Dichlorobenzene	L	Poly-Flex	Some effect after 7 days exp	< 0.1 mg/l
1,4 Dichlorobenzene	p-Dichlorobenzene	L	Poly-Flex	Some effect after 7 days exp	< 0.1 mg/l
Diethyl phthalate		P	NSC	200.0 mg/l (c)	0.1 mg/l
Ethylbenzene		P	NSC	200.0 mg/l (c)	
		P	Poly-Flex	Little or no effect after 30 days exposure	
Fluoranthene		P	NSC	50.0 mg/l (c)	< 0.1 mg/l
Fluorene		P	NSC	50.0 mg/l (c)	< 0.1 mg/l
		P	Poly-Flex	Little or no effect after 30 days exposure at 20 degrees C.	
Indeno(1,2,3-cd)pyrene		P	NSC	200.0 mg/l (c)	< 0.1 mg/l
2-Hexanone	Metyl Buytl Ketone	-	-	-	< 0.1 mg/l
2-Methylnaphthalene	naphthalene	P	NSC	200.0 mg/l (c)	0.3 mg/l
4-Methylphenol	p-cresol	P	NSC	50.0 mg/l (c)	1.0 mg/l
Naphthalene		P	NSC	200.0 mg/l (c)	0.8 mg/l
2-Nitrophenol		P	NSC	50.0 mg/l (c)	0.6 mg/l
N-Nitrosodiphenylamine	N-nitrosodi-n-propylamin	P	NSC	1000.0 mg/l (c)	< 0.1 mg/l
Pentachlorophenol		P	NSC	50.0 mg/l (c)	< 0.1 mg/l
Phenanthrene		P	NSC	200.0 mg/l (c)	< 0.1 mg/l
Phenol		P	NSC	200.0 mg/l (c)	1.0 mg/l
		U	Poly-Flex	100% conc.	
1,1,1-Trichloroethane	Trichloroethane	P	NSC	100.0 mg/l (c)	< 0.1 mg/l
Pyrene		P	NSC	200.0 mg/l (c)	< 0.1 mg/l
Xylenes		P	NSC	200.0 mg/l (c)	0.2 mg/l
		L	SLT	100% conc.	
2,4-D		-	-	-	< 0.1 mg/l
4,4-DDD		P	NSC	50.0 mg/l (c)	
4,4-DDE		P	NSC	50.0 mg/l (c)	0.0 mg/l

Aldrin of Octalene	Aldrin	P	NSC	50.0 mg/l (c)	< 0.1 mg/l
Cyclohexane	Beta-BHC-Lindane	L	Poly-Flex	Some effect after 30 days	< 0.1 mg/l
Dieldrin	Octalox	P	NSC	200.0 mg/l (c)	< 0.1 mg/l
Endrin	Octalox	P	NSC	100.0 mg/l (c)	< 0.1 mg/l
Naphthalene	gamma-Chlordane	P	NSC	200.0 mg/l (c)	
Heptachlor	alpha-Dicyclopentadiene	P	NSC	100.0 mg/l (c)	< 0.1 mg/l
RADIONUCLIDE					
Americium-241		-	-	-	
Beryllium-7		-	-	-	
Carbon-14		-	-	-	
Cesium-134		-	-	-	
Cesium-137		-	-	-	
Chromium-51		-	-	-	
Cobalt-58		-	-	-	
Cobalt-60		-	-	-	
Constituent		-	-	-	
Europium-152		-	-	-	
Europium-154		-	-	-	
Europium-155		-	-	-	
Plutonium-239/240		-	-	-	
Potassium-40		-	-	-	
Radium-226		-	-	-	
Sodium-22		-	-	-	
Strontium-90		-	-	-	
Technetium-99		-	-	-	
Thorium-228		-	-	-	
Thorium-232		-	-	-	
Uranium-233/234		-	-	-	
Uranium-235		-	-	-	
Uranium-238		-	-	-	

P = Passing test according to manufacturer's data.
L = Limited application possible according to manufacturer's data.
U = Unsatisfactory performance according to manufacturer's data.

NSC = National Seal Corporation
SLT = SLT North America, Inc.

(a) Pass rating assumed on basis of classification as metallic salt.
(b) Pass rating assumed on basis of classification as inorganic salt.
(c) Maximum concentration recommended by manufacturer; test data not directly reviewed.

- = Test Data not Identified

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NSC

National Seal Company

Western Region
525 Reactor Way
Reno, NV 89502

(702) 856-3200
(702) 856-8719 FAX

Date: 3/10/94

Total No. of Pages: 7 (including cover)

TO: RICHARD LUALLE FAX NO.: 1-206-882-5498

FROM: CLARK WEST

RE: HD CHEMICAL COMPATIBILITY

MESSAGE:

INFORMATION YOU REQUESTED

Thanks

Clark

If any problems arise during transmission, please contact ________ as soon as possible at (702) 856-3200.

LINER COMPATIBILITY

1. Identify the manufacturer and the type of liner that will be used in the landfill which will contain the form R wastes. National Seal Company - High Density Polyethylene (HDPE)

2. Describe how the following types of chemicals will affect the liner to be used to contain the form R waste:

   Aromatic Halogenated Hydrocarbons - At elevated temperatures may slowly dissolve HDPE under continuous, concentrated exposure.

   Aliphatic Halogenated Hydrocarbons - May soften HDPE, reduce yield strength, and increase permeability.

   Aromatic Hydrocarbons - Affects HDPE in a similar manner to halogenated hydrocarbons, but to a lesser extent.

   Volatile and Semi-Volatile Organics - Affect HDPE in a manner similar to aromatic hydrocarbons, but to a lesser extent.

   Oil and Grease - Slight softening and slight loss of strength.

   Strong Oxidizers - Concentrated solutions can cause embrittlement overtime.

   Acids - Effects vary. Oxidizing acids perform similar to strong oxidizers when in high concentrations.

   Bases - Generally not harmful to HDPE.

   Dissolved Metals, Salts and Nutrients - No effect on HDPE.

4. Give an acceptable compatability limit for each of the compounds on the following pages and certification by the liner manufacturer.

[signature]
Signature-NSC

Manager of Chemical Research
Title

The values listed reflect the effect of each chemical as a lone component in a waste stream. The values for individual chemicals can not be considered valid when there is more than one chemical.

LINER COMPATIBILITY

PARAMETER CLASSIFICATION	PARAMETER	MANUFACTURER'S LINER/LEACHATE LIMIT, mg/l, Maximum
Aromatic Halogenated Hydrocarbons	polychlorinated biphenyl	(50)
	aldrin	(50)
	dichlorobenzene	(50)
	hexachlorobenzene	(50)
	pentachlorobenzene	(50)
	trichlorobenzene	(50)
	tetrachlorobenzene	(50)
	2-chloronaphthalene	(50)
	chlorobenzene	(50)
	4,4-DDT	(50)
	4,4-DDE	(50)
	4,4-DDD	(50)
Aliphatic Halogenated Hydrocarbons	bromoform	(100)
	carbon tetrachloride	(100)
	chlorodibromomethane	(100)
	chloroethane	(100)
	chloroform	(100)
	dichlorobromomethane	(100)
	dichlorodifluoromethane	(100)
	dichloroethene	(100)
	dichloropropane	(100)
	dichloroethene	(100)
	ethylene chloride	(100)
	ethylene dichloride	(100)
	hexachloroethane	(100)
	methyl bromide	(100)
	methyl chloride	(100)
	methylene chloride	(100)
	tetrachloroethane	(100)
	tetrachloroethene	(100)
	trichloroethane	(100)
	trichloroethene	(100)
	trichlorofluoromethane	(100)
	vinyl chloride	(100)

LINER COMPATIBILITY

PARAMETER CLASSIFICATION	PARAMETER	MANUFACTURER'S LINER/LEACHATE LIMIT, mg/l, Maximum
Aromatic Hydrocarbons	acenapthene	(200)
	acenaphthylene	(200)
	anthracene	(200)
	benzene	(200)
	benzo (a)anthracene	(200)
	benzo (a)pyrene	(200)
	benzo (g,h,i) perylene	(200)
	benzo (k)fluoranthene	(50)
	3,4-benzoflouranthene	(50)
	chrysene	(200)
	dibenzo(a,h)anthracene	(200)
	ethyl benzene	(200)
	flouranthene	(50)
	flourene	(50)
	ideno(1,2,3,c,d)pyrene	(200)
	naphthalene	(200)
	phenanthrene	(200)
	pyrene	(200)
	styrene	(200)
	toluene	(200)
	xylene	(200)
Aliphatic Hydrocarbons	heptane	(1000)
	hexane	(1000)
	octane	(1000)

LINER COMPATIBILITY

PARAMETER CLASSIFICATION	PARAMETER	MANUFACTURER'S LINER/LEACHATE LIMIT, mg/l, Maximum
Volatile & Semivolatile Organics	acrolein	(1000)
	acrylonitrile	(1000)
	acetone	(1000)
	amyl acetate	(1000)
	benzidine	(200)
	butyl alcohol	(1000)
	bis(2-chloroethoxy)methane	(100)
	bis(2-chloroethoxy)ether	(100)
	bis(2-chloroisopropyl)ether	(100)
	bis(2-ethylhexyl)pthyhalate	(200)
	4-bromophenyl phenyl ether	(50)
	butyl benzyl phthalate	(200)
	cresol	(50)
	chlordane	(100)
	alpha-BHC	(100)
	beta-BHC	(100)
	gamma-BHC	(100)
	delta-BHC	(100)
	dieldrin	(100)
	dichlorobenzidine	(50)
	diethyl phthalate	(200)
	dibutyl phthalate	(200)
	dimethyl phthalate	(200)
	isobutyl alcohol	(1000)
	isopropyl alcohol	(1000)
	methyl alcohol	(1000)
	2-chloroethyl vinyl ether	(100)
	2-chlorophenol	(50)
	dichlorophenol	(50)
	dimethyl phenol	(50)
	dinitro-o-cresol	(50)
	dinitrophenol	(50)
	dinitrotoluene	(200)
	diphenylhydrazine	(1000)
	ethyl acetate	(1000)
	ethyl ether	(1000)
	ethyl glycol	(1000)
	endosulfan	(100)
	endrin	(100)

LINER COMPATIBILITY

PARAMETER CLASSIFICATION	PARAMETER	MANUFACTURER'S LINER/LEACHATE LIMIT, mg/1, Maximum
Volatile & Semivolatile Organics	formaldehyde	(1000)
	heptachlor	(100)
	hexachlorocyclopentadiene	(100)
	hexachlorobutadiene	(100)
	isophorone	(1000)
	methyl ethyl ketone	(1000)
	methyl isobutyl ketone	(1000)
	nitrophenol	(50)
	N-nitrosodimethylamine	(1000)
	N-nitrosodi-n-propylamine	(1000)
	nitrobenzene	(200)
	pentachlorophenol	(50)
	phenol	(200)
	pyridine	(1000)
	toxaphene	(100)
	trichlorophenol	(50)
	2,4,5-TP(silvex)	(50)

LINER COMPATIBILITY

PARAMETER CLASSIFICATION	PARAMETER	MANUFACTURER'S LINER/LEACHATE LIMIT, mg/1, Maximum
Acid & Bases	acetic acid	(610)
	chromic acid	(2180)
	citric acid	(2100)
	hydrobromic acid	(810)
	hydrochloric acid	(365)
	hydrocyanic acid	(270)
	hydrofluoric acid	(200)
	nitric acid	(630)
	picric acid	(2290)
	phosphoric acid	(820)
	perchloric acid	(1000)
	sulfuric acid	(940)
	potassium hydroxide	(550)
	sodium hydroxide	(400)
Products & Various Substances	antifreeze	(1000)
	asphalt	(20,000)
	cresols	(50)
	crude oil	(20,000)
	diesel fuel	(20,000)
	fatty acids	(20,000)
	freon	(100)
	fuel oil	(20,000)
	gasoline	(20,000)
	hydraulic oil	(20,000)
	kerosene	(20,000)
	lacquers	(20,000)
	lubricating oil	(20,000)
	mineral spirits	(1000)
	naphtha	(1000)
	paraffin	(20,000)
	transformer oil	(20,000)
miscellaneous	pH	(2-14**)
	strong oxidizers*	(1000)
	metals, salts, nutrients	(No Effect)

*potassium permanganate, potassium dichromate, chlorine, peroxides
** note pH units not mg/L

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POLY-FLEX
POLYETHYLENE GEOMEMBRANES

Chemical Resistance Information (Cont'd.)

CHEMICAL	LDPE	HDPE
Lactic Acid, 3%	EG	EE
Lactic Acid, 85%	EE	EE
Mercury	EE	EE
2-Methoxyethanol	EG	EE
Methoxyethyl Oleate	EG	EE
Methyl Acetate	FN	FF
Methyl Alcohol	EE	EE
Methyl Ethyl Ketone	EG	EE
Methyl Isobutyl Ketone	GF	EG
Methyl Propyl Ketone	GF	EG
Methyl-t-butyl Ether	NN	FN
Methylene Chloride	FN	GF
Mineral Oil	GN	EE
Mineral Spirits	FN	FN
Nitric Acid, 1-10%	EE	EE
Nitric Acid, 50%	GG	GN
Nitric Acid, 70%	FN	GN
Nitrobenzene	NN	FN
Nitromethane	NN	FN
n-Octane	EE	EE
Orange Oil	FN	GF
Ozone	EG	EE
Perchloric Acid	GN	GN
Perchloroethylene	NN	NN
Phenol, Crystals	GN	GF
Phenol, Liquid	NN	NN
Phosphoric Acid, 1-5%	EE	EE
Phosphoric Acid, 85%	EE	EE
Picric Acid	NN	NN
Pine Oil	GN	EG
Potassium Hydroxide, 1%	EE	EE
Potassium Hydroxide, Conc.	EE	EE
Propane Gas	NN	FN
Propionic Acid	FN	EF
Propylene Glycol	EE	EE
Propylene Oxide	EG	EE
Resorcinol, Sat.	EE	EE
Resorcinol, 5%	EE	EE
Salicylaldehyde	EG	EE

CHEMICAL	LDPE	HDPE
Salicylic Acid, Powder	EE	EE
Salicylic Acid, Sat.	EE	EE
Salt Solutions, Metallic	EE	EE
Silicone Oil	EG	EE
Silver Acetate	EE	EE
Silver Nitrate	EG	EE
Skydrol LD4	GF	EG
Sodium Acetate, Sat.	EE	EE
Sodium Hydroxide, 1%	EE	EE
Sodium Hydroxide, 50% to Sat.	GG	EE
Sodium Hypochlorite, 15%	EE	EE
Stearic Acid, Crystals	EE	EE
Sulfuric Acid, 1-6%	EE	EE
Sulfuric Acid, 20%	EE	EE
Sulfuric Acid, 60%	EG	EE
Sulfuric Acid, 98%	GG	GG
Sulfur Dioxide, Liq., 46 psig	NN	FN
Sulfur Dioxide, Wet of Dry	EE	EE
Sulfur Salts	FN	GF
Tartaric Acid	EE	EE
Tetrahydrofuran	FN	GF
Thionyl Chloride	NN	NN
Toluene	FN	GG
Tributyl Citrate	GF	EG
Trichloroacetic Acid	FN	FF
1,2,4-Trichlorobenzene	NN	NN
Trichloroethane	NN	FN
Trichloroethylene	NN	FN
Triethylene Glycol	EE	EE
2,2,4-Trimethylpentane	FN	FN
Tripropylene Glycol	EE	EE
Tris Buffer, Solution	EG	EG
Turpentine	FN	GG
Undecyl Alcohol	EF	EG
Urea	EE	EE
Vinylidene Chloride	NN	FN
Xylene	GN	GF
Zinc Stearate	EE	EE

POLY-FLEX
POLYETHYLENE GEOMEMBRANES

Chemical Resistance Information (Cont'd.)

CHEMICAL	LDPE	HDPE
Chloroacetic Acid	EE	EE
p-Chloroacetophenone	EE	EE
Chloroform	FN	GF
Chromic Acid, 10%	EE	EE
Chromic Acid, 50%	EE	EE
Cinnamon Oil	NN	FN
Citric Acid, 10%	EE	EE
Cresol	NN	FN
Cyclohexane	FN	FN
Cyclohexanone	NN	FN
Cyclopentane	NN	FN
DeCalin	GF	EG
n-Decane	FN	FN
Diacetone Alcohol	FN	EE
o-Dichlorobenzene	FN	FF
p-Dichlorobenzene	FN	GF
1,2-Dichloroethane	NN	NN
2,4-Dichlorophenol	NN	NN
Diethyl Benzene	NN	FN
Diethyl Ether	NN	FN
Diethyl Ketone	GF	GG
Diethyl Malonate	EE	EE
Diethylamine	NN	FN
Diethylene Glycol	EE	EE
Diethylene Glycol Ethyl Ether	EE	EE
Dimethyl Acetamide	FN	EE
Dimethyl Formamide	EE	EE
Dimethylsulfoxide	EE	EE
1,4-Dioxane	GF	GG
Dipropylene Glycol	EE	EE
Ether	NN	FN
Ethyl Acetate	EE	EE
Ethyl Alcohol (Absolute)	EG	EE
Ethyl Alcohol, 40%	EG	EE
Ethyl Benzene	FN	GF
Ethyl Benzoate	FF	GG
Ethyl Butyrate	GN	GF
Ethyl Chloride, Liquid	FN	FF
Ethyl Cyanoacetate	EE	EE

CHEMICAL	LDPE	HDPE
Ethyl Lactate	EE	EE
Ethylene Chloride	GN	GF
Ethylene Glycol	EE	EE
Ethylene Glycol Methyl Ether	EE	EE
Ethylene Oxide	FF	GF
Fatty Acids	EG	EE
Fluorides	EE	EE
Fluorine	FN	GN
Formaldehyde, 10%	EE	EE
Formaldehyde, 40%	EG	EE
Formic Acid, 3%	EG	EE
Formic Acid, 50%	EG	EE
Formic Acid, 98-100%	EG	EE
Freon TF	EG	EG
Fuel Oil	FN	GF
Gasoline	FN	GG
Glacial Acetic Acid	EG	EE
Glutaraldehyde (Disinfectant)	EG	EE
Glycerine	EE	EE
n-Heptane	FN	GF
Hexane	NN	GF
Hydrazine	NN	NN
Hydrochloric Acid, 1-5%	EE	EE
Hydrochloric Acid, 20%	EE	EE
Hydrochloric Acid, 35%	EE	EE
Hydrofluoric Acid, 4%	EG	EE
Hydrofluoric Acid, 48%	EE	EE
Hydrogen Peroxide, 3%	EE	EE
Hydrogen Peroxide, 30%	EG	EE
Hydrogen Peroxide, 90%	EG	EE
Iodine Crystals	NN	NN
Isobutyl Alcohol	EE	EE
Isopropyl Acetate	GF	EG
Isopropyl Alcohol	EE	EE
Isopropyl Benzene	FN	GF
Isopropyl Ether	NN	NN
Jet Fuel	FN	FN
Kerosene	FN	GG
Lacquer Thinner	NN	FN

Chemical Resistance Information

Poly-Flex and Dura-Flex polyethylenes are primarily inert and stable, and contain no plasticizers. Since chemical resistance data for Dura-Flex is limited, the following chart (compiled by Nalgene), which documents such data for Low Density Polyethylene (LDPE) and High Density Polyethylene (HDPE), is included. The chemical resistance qualities for LDPE can be used only as a guideline for Dura-Flex material. It is important to note that chemical mixtures do not necessarily affect plastics in the same way that the component chemicals of the same mixture will individually. Chemical attack is influenced by temperature, length of contact with material, chemical concentration, and chemical composition. It is therefore recommended that immersion tests be conducted during the design stage of a project, to confirm the stability of the selected membrane type.

- **E** — 30 days of constant exposure cause no damage. Plastic may even tolerate for years.
- **G** — Little or no damage after 30 days of constant exposure to the reagent.
- **F** — Some effect after 7 days of constant exposure to the reagent. Depending on the plastic, the effect may be crazing, cracking, loss of strength, or discoloration. Solvents may cause softening, swelling and permeation losses with LDPE and HDPE. The solvent effects on these resins are normally reversible; the part will ususally return to its normal condition after evaporation.
- **N** — Not recommended for continuous use. Immediate damage may occur. Depending on the plastic, the effect will be a more severe crazing, cracking, loss of strength, discoloration, deformation, dissolution or permeation loss.

The first letter of each pair applies to conditions at 20° C (68° F); the second to those at 50° C (122° F).

CHEMICAL	LDPE	HDPE
Acetaldehyde	GN	GF
Acetamide, Sat.	EE	EE
Acetic Acid, 5%	EE	EE
Acetic Acid, 50%	EE	EE
Acetic Anhydride	NN	FF
Acetone	EE	EE
Acetonitrile	EE	EE
Acrylonitrile	EE	EE
Adipic Acid	EG	EE
Alanine	EE	EE
Allyl Alcohol	EE	EE
Aluminum Hydroxide	EG	EE
Aluminum Salts	EE	EE
Amino Acids	EE	EE
Ammonia	EE	EE
Ammonium Acetate, Sat.	EE	EE
Ammonium Glycolate	EG	EE
Ammonium Hydroxide, 5%	EE	EE
Ammonium Hydroxide, 30%	EG	EE
Ammonium Oxalate	EG	EE
Ammonium Salts	EE	EE
n-Amyl Acetate	GF	EG
Amyl Chloride	NN	FN
Aniline	EG	EG
Aqua Regia	NN	NN
Benzaldehyde	EG	EE
Benzene	FN	GG
Benzoic Acid, Sat.	EE	EE
Benzyl Acetate	EG	EE
Benzyl Alcohol	NN	FN
Bromine	NN	FN
Bromobenzene	NN	FN
Bromoform	NN	NN
Butadiene	NN	FN
Butyl Chloride	NN	NN
n-Butyl Acetate	GF	EG
n-Butyl Alcohol	EE	EE
sec-Butyl Alcohol	EG	EE
tert-Butyl Alcohol	EG	EE
Butyric Acid	NN	FN
Calcium Hydroxide, Conc.	EE	EE
Calcium Hypochlorite, Sat.	EE	EE
Carbazole	EE	EE
Carbon Disulfide	NN	NN
Carbon Tetrachloride	FN	GF
Cedarwood Oil	NN	FN
Cellosolve Acetate	EG	EE
Chlorobenzene	NN	FN
Chlorine, 10% in Air	GN	EF
Chlorine, 10% (Moist)	GN	GF

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SLT NORTH AMERICA, INC.

200 SOUTH TRADE CENTER PARKWAY
CONROE, TX 77385
TEL: (713) 350-1813

Answering fax should be directed to:

Conroe:

Finance/Admin.	Fax: (409) 273-3808	☐
Sales/Marketing	Fax: (409) 273-2268	☐
Const. Services	Fax: (409) 273-4673	☐

Hardy Street Plant:

	Tel: (713) 847-3800	
Purchasing/Admin.	Fax: (713) 847-1725	☐
Mfg./Shipping/Receiving Plant & Lab	Fax: (713) 847-2955	☐

Facsimile Transmittal Sheet

Date: 3-10

Company: Golder Assoc

Attention: Richard Luark

Fax Number: 206-882-5498

From: Claudia Dept.:

Number of pages (including this page): 3

If you have any problems receiving this facsimile transmittal, or if you did not receive all pages indicated, please call the applicable department listed above.

Message

For environmental lining solutions...the world comes to SLT.

SLT North America, Inc

Chemical Resistance

Listed below are test results reported by the supplier of the high-density polyethyler resin used to manufacture SLT sheet. The high-density polyethylene is resistant to tl chemicals listed. The degree of chemical attack on any material is influenced by number of variable factors and their interaction, including temperature, pressure, siz of area under attack, exposure duration and the like. Where sheet will be exposed to mixture of chemicals, it is recommended that tests be performed for sheet resistance t that chemical mixture. Therefore, these ratings are offered as a guide only.

Abbreviations
S = Satisfactory
L = Limited application possible
U = Unsatisfactory
— = Not tested

Concentration
sat. sol. = Saturated aqueous solution, prepared at 20°C (68°F)
sol. = aqueous solution with concentration above 10% but below saturation level
dil. sol. = diluted aqueous solution with concentration below 10%
cust. conc. = customary service concentration

Medium	Concentration	Resistance at 20°C (68°F)	Resistance at 60°C (140°F)
A			
Acetic acid	100%	S	L
Acetic acid	10%	S	S
Acetic acid anhydride	100%	S	L
Acetone	100%	L	L
Adipic acid	sat. sol.	S	S
Allyl alcohol	96%	S	S
Aluminum chloride	sat. sol.	S	S
Aluminum fluoride	sat. sol.	S	S
Aluminum sulfate	sat. sol.	S	S
Alums	sol.	S	S
Ammonia, aqueous	dil. sol.	S	S
Ammonia, gaseous dry	100%	S	S
Ammonia, liquid	100%	S	S
Ammonium chloride	sat. sol.	S	S
Ammonium fluoride	sol.	S	S
Ammonium nitrate	sat. sol.	S	S
Ammonium sulfate	sat. sol.	S	S
Ammonium sulfide	sol.	S	S
Amyl acetate	100%	S	L
Amyl alcohol	100%	S	L
Aniline	100%	S	L
Antimony trichloride	90%	S	S
Arsenic acid	sat. sol.	S	S
Aqua regia	HCl-HNO,3/1	U	U
B			
Barium carbonate	sat. sol	S	S
Barium chloride	sat. sol	S	S
Barium hydroxide	sat. sol	S	S
Barium sulfate	sat. sol	S	S
Barium sulfide	sol.	S	S
Benzaldehyde	100%	S	L
Benzene	—	L	L
Benzoic acid	sat. sol.	S	S
Beer	—	S	S
Borax	sat. sol.	S	S
Boric acid	sat. sol	S	S
Bromine, gaseous dry	100%	U	U
Bromine, liquid	100%	U	U
Butane, gaseous	100%	S	S
Butanol	100%	S	S
Butyric acid	100%	S	L
C			
Calcium carbonate	sat. sol.	S	S
Calcium Chlorate	sat. sol.	S	S
Calcium Chloride	sat. sol.	S	S
Calcium hydroxide	sat. sol.	S	S
Calcium hypochlorite	sol.	S	S
Calcium nitrate	sat. sol.	S	S
Calcium sulfate	sat. sol	S	S
Calcium sulfide	dil. sol.	L	
Carbon dioxide, gaseous dry	100%	S	
Carbon disulfide	100%	L	U
Carbon monoxide	100%	S	S
Chloracetic acid	sol.	S	S
Carbon tetrachloride	100%	L	U
Chlorine, aqueous solution	sat. sol.	L	U
Chlorine, gaseous dry	100%	L	U
Chloroform	100%	U	U
Chromic acid	20%	S	L
Chromic acid	50%	S	L
Citric acid	sat. sol.	S	S
Copper chloride	sat. sol.	S	S
Copper nitrate	sat. sol.	S	S
Copper sulfate	sat. sol.	S	S
Cresylic acid	sat. sol.	L	—
Cyclohexanol	100%	S	S
Cyclohexanone	100%	S	L
D			
Decahydronaphthalene	100%	S	L
Dextrine	sol.	S	S
Diethyl ether	100%	L	—
Dioctylphthalate	100%	S	L
Dioxane	100%	S	S
E			
Ethane diol	100%	S	S
Ethanol	40%	S	L
Ethyl acetate	100%	S	U
Ethylene trichloride	100%	U	U
F			
Ferric chloride	sat. sol	S	S
Ferric nitrate	sol.	S	S
Ferric sulfate	sat. sol.	S	S
Ferrous chloride	sat. sol	S	S
Ferrous sulfate	sat. sol	S	S
Fluorine, gaseous	100%	U	U
Fluosilicic acid	40%	S	S
Formaldehyde	40%	S	S
Formic acid	50%	S	
Formic acid	98-100%	S	
Furfuryl alcohol	100%	S	

SLT NORTH AMERICA, INC.
Subsidiary of SLT Environmental, Inc.
200 S. Trade Center Parkway Conroe, Texas 77385
(800) 231-1298 (713) 350-1813 Fax. (409) 273-2266

Medium	Concentration	Resistance at 20°C (68°F)	Resistance at 60°C (140°F)
G			
Gasoline	—	S	L
Glacial acetic acid	96%	S	L
Glucose	sat. sol.	S	S
Glycerine	100%	S	S
Glycol	sol.	S	S
H			
Heptane	100%	S	U
Hydrobromic acid	50%	S	S
Hydrobromic acid	100%	S	S
Hydrochloric acid	10%	S	S
Hydrochloric acid	concentrated	S	S
Hydrocyanic acid	10%	S	S
Hydrofluoric acid	4%	S	S
Hydrofluoric acid	60%	S	L
Hydrogen	100%	S	S
Hydrogen peroxide	30%	S	S
Hydrogen peroxide	90%	S	U
Hydrogen sulfide, gaseous	100%	S	S
L			
Lactic acid	100%	S	S
Lead acetate	sat. sol.	S	—
M			
Magnesium carbonate	sat. sol.	S	S
Magnesium chloride	sat. sol.	S	S
Magnesium hydroxide	sat. sol.	S	S
Magnesium nitrate	sat. sol.	S	S
Maleic acid	sat. sol.	S	S
Mercuric chloride	sat. sol.	S	S
Mercuric cyanide	sat. sol.	S	S
Mercuric nitrate	sol.	S	S
Mercury	100%	S	S
Methanol	100%	S	S
Methylene chloride	100%	L	—
Milk	—	S	S
Molasses	cust. conc.	S	S
N			
Nickel chloride	sat. sol.	S	S
Nickel nitrate	sat. sol.	S	S
Nickel sulfate	sat. sol.	S	S
Nicotinic acid	dil. sol.	S	—
Nitric acid	25%	S	S
Nitric acid	50%	S	U
Nitric acid	75%	U	U
Nitric acid	100%	U	U
O			
Oils and Grease	—	S	L
Oleic acid	100%	S	L
Orthophosphoric acid	50%	S	S
Orthophosphoric acid	95%	S	L
Oxalic acid	sat. sol.	S	S
Oxygen	100%	S	L
Ozone	100%	L	U
P			
Petroleum	—	S	L
Phenol	sol.	S	S
Phosphorus trichloride	100%	S	L
Photographic developer	cust. conc.	S	S
Picric acid	sat. sol.	S	—
Potassium bicarbonate	sat. sol	S	S
Potassium bisulfide	sol.	S	S
Potassium bromate	sat. sol.	S	S
Potassium bromide	sat. sol.	S	S
Potassium carbonate	sat. sol	S	S
Potassium chlorate	sat. sol	S	S
Potassium chloride	sat. sol.	S	S
Potassium chromate	sat. sol.	S	S
Potassium cyanide	sol.	S	S
Potassium dichromate	sat. sol.	S	S
Potassium ferricyanide	sat. sol	S	S
Potassium ferrocyanide	sat. sol	S	S
Potassium fluoride	sat. sol	S	S
Potassium hydroxide	10%	S	S
Potassium hydroxide	sol.	S	S
Potassium hypochlorite	sol.	S	L
Potassium nitrate	sat. sol.	S	S
Potassium orthophosphate	sat. sol.	S	S
Potassium perchlorate	sat. sol.	S	S
Potassium permanganate	20%	S	S
Potassium persulfate	sat. sol.	S	S
Potassium sulfate	sat. sol.	S	S
Potassium sulfite	sol.	S	S
Propionic acid	50%	S	S
Propionic acid	100%	S	L
Pyridine	100%	S	L
Q			
Quinol (Hydroquinone)	sat. sol.	S	S
S			
Salicylic acid	sat. sol.	S	S
Silver acetate	sat. sol.	S	S
Silver cyanide	sat. sol.	S	S
Silver nitrate	sat. sol.	S	S
Sodium benzoate	sat. sol.	S	S
Sodium bicarbonate	sat. sol.	S	S
Sodium biphosphate	sat. sol.	S	S
Sodium bisulfite	sol.	S	S
Sodium bromide	sat. sol.	S	S
Sodium carbonate	sat. sol.	S	S
Sodium chlorate	sat. sol.	S	S
Sodium chloride	sat. sol.	S	S
Sodium cyanide	sat. sol.	S	S
Sodium ferricyanide	sat. sol.	S	S
Sodium ferrocyanide	sat. sol.	S	S
Sodium fluoride	sat. sol.	S	S
Sodium hydroxide	40%	S	S
Sodium hydroxide	sat. sol.	S	S
Sodium hypochlorite	15% active chlorine	S	S
Sodium nitrate	sat. sol.	S	S
Sodium nitrite	sat. sol.	S	S
Sodium orthophosphate	sat. sol.	S	S
Sodium sulfate	sat. sol.	S	S
Sodium sulfide	sat. sol.	S	S
Sulfur dioxide, dry	100%	S	S
Sulfur trioxide	100%	U	U
Sulfuric acid	10%	S	S
Sulfuric acid	50%	S	S
Sulfuric acid	98%	S	U
Sulfuric acid	fuming	U	U
Sulfurous acid	30%	S	S
T			
Tannic acid	sol.	S	S
Tartaric acid	sol.	S	S
Thionyl chloride	100%	L	U
Toluene	100%	L	U
Triethylamine	sol.	S	L
U			
Urea	sol.	S	S
Urine	—	S	S
W			
Water	—	S	S
Wine vinegar	—	S	S
Wines and liquors	—	S	S
X			
Xylene	100%	L	L
Y			
Yeast	sol.	S	S
Z			
Zinc carbonate	sat. sol.	S	S
Zinc chloride	sat. sol.	S	S
Zinc (II) chloride	sat. sol.	S	S
Zinc (IV) chloride	sat. sol.	S	S
Zinc oxide	sat. sol.	S	S
Zinc sulfate	sat. sol.	S	S

Specific immersion testing should be undertaken to ascertain the suitability of chemicals not listed above with reference to special requirements.

(S) Satisfactory: *Liner material is compatible to the given reagent at the given concentration and temperature. No mechanical or chemical degradation is encountered.*

(L) Limited Application Possible: *Liner material may encounter some attack. Factors such as concentration, pressure and temperature directly affect liner performance against the given media. Application is however possible under less severe conditions, e.g. lower concentration, secondary containment, additional liner protection, etc.*

(U) Unsatisfactory: *Liner material is not compatible to the given reagent at the given concentration and temperature. Mechanical and/or chemical degradation is encountered.*

(—) Not tested

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FAX TRANSMITTAL

To:	Richard Luark	Contact:	Roger Krabel
Company:	Golder & Assoc.	GUNDLE LINING SYSTEMS	
Date:	March 10, 1994	FAX#:	713-875-6010
Time:	11:32 AM	# of pages (including this page):	19
Country:			
FAX#:	206-882-5498		

SUBJECT: Please see attached

CHEMICAL COMPATIBILITY TEST DATA
(Reports Available)

Report Number	Type of Chemical
105	Stripped Gas Liquor (70° C)
109	Sulphuric Acid (97.3%) (25° C)
111	Metal Hydroxide Waste Water Sludge
156*	E-2 Sludge
185	No. 6 Fuel Oil
197*	Sludge E-1; Sludge T-1; Flyash E-2; Neutralized T-1
208	Contaminated Water Samples
210	Kerosene
216	Hydrochloric Acid; Methanol; Diethylbenzene
227	Aromatic Waste Containing Inorganics
234	Creosote Emulsion
251	Potato Plant Wastewater
298	Escaid 100 (Kerosene)
334	Kerosene (Jet Fuel)
425*	Wastewater - Synthetic & Rutile Ore; Petroleum Coke; Sand & Grid; Hydroxides; oxides; iron; chromium; calcium carbonate; manganese, arsenic; nickel; salts; calcium sulfate
451	Shop dust leachate' pickle liquor sludge leachate
533	Leachate solution
553	Fuel Oil (Automotive Fuels)
563	Leachate Solution (PVC); 3300 Polylefin
567	Metals Leachate (black mud slurry waste)
629	Creosote
644	Petroleum Waste Sludge
656	Black Liquor (Hypalon)
667	Aromatic Leachate
671*	Trichloroethylene
690	Synthetic Leachate (Gundnet; Gundfab: Gundflex 300)
730*	Boiler Blow-down Waste; Brine Concentrate
731	Aromatic Hydrocarbons
763	Leachate generated from air pollution sludge; flue dust
796	Herbicides & Metals Leachate
914	Exposure to Metal Leachate after One Year
962	Nitric Acid (10% & 50%)
1118	Chemical Waste (Organic & Acidic/Basic)
1119	Cholorinated Hydrocarbon Leachate
1195	Dichlorobenzene
1196	Dichlorobenzene Plus Water
1197	Dichloroethylene
1198	Dichloroethylene Plus Water
1315	Ethylene Dichloride Solution (2-3%)
1316	Resin Waste Containing Methyl Methacrylate (40 Days)
1327	Typical Landfill Leachate
1370	Landfill Leachate
1371	Synthetic Hazardous Waste Mixture
1374	Municipal Landfill Leachate (PVC)
1375	Municipal Landfill Leachate (Driline)
1376	Nacl Solution

* Chemical Analysis Included

1448	Pond Water
1449	Methyl Methacrylate (120 Days)
1450	Oil Retention Pond Waste
1519	Synthetic Leachate/Neutralization Sludge
1520	Spent Carbon
1521	Mill Waste
1522	Flame Retardant
1523	Municipal/Residual Waste
1524	Chemical Waste Solution from NUS Corp.
1525	Municipal Landfill Leachate
1584	Brominated Hydrocarbon Solution (ALRS)
1617	Treated Sludge (Dust)
1705	Phosphate Leachate
1775	Wastewater Leachate
1785	Cyanide
1824	Heavy Metals Leachate
1825	Landfill Leachate
1870	Waste Water
1952	Creosote Emulsion
1953	Flume Wastewater
1954	Solvent/Pesticide Waste (Casmalia)
1989	Ground Wastewater (Aromatic Hydrocarbon Waste)
2043	Paint Reducer & Paint Thinner
2044	Creosote Emulsion (LDPE & HDPE)
2098	Chlorinated Pesticide
2114	Metals Leachate
2148	Waste Sludge
2214	Dichlorobenzene
2277	Toluene
2357	Nitric Acid
2817*	Metal Salts, Hydrocarbons & Halogenated Compounds
2901*	Landfill Leachate
3183*	Toluene, Ethylbenzene
3600*	Dichloroethane & Miscellaneous Organic Solvents
3601*	Incinerator Ash Sludge
4214*	Chlorinated Hydrocarbon Waste, Ketones, Alcohols
4215*	Phenolic Landfill Leachate
5081*	Heavy Metal Leachate
5771*	Aromatic & Phenolic
5812*	Phenolics, Aromatics, Sulfates, Nitrates
5815*	Chromate Copper Arsenate (Wood Preservative)
5882*	Anthraquinones (Aromatic Solvent)
5969*	Aromatics, Phenolics
OL 001*	Chemical Compatibility Testing of HDPE Chevron Resin
OL 002*	Chemical Compatibility Testing of HDPE Union Carbide Resin
OL 003*	Chemical Compatibility Testing of HDPE Solvay Resin
OL 004*	Chemical Compatibility Testing of HDPE Geomembrane
OL 005*	Chemical Resistance of Jet Fuel--TRI Test Results (80mil)
OL 006*	Chemical Resistance of Jet Fuel--TRI Test Results (60mil)
OL 007*	Chemical Compatibility Testing of HDPE Quantum Resin

* Chemical Analysis Included

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CHEMICAL COMPATIBILITY CONSIDERATIONS

FOR HIGH DENSITY POLYETHYLENE LINERS

IN WASTE CONTAINMENT

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TP-9

CHEMICAL COMPATIBILITY CONSIDERATIONS FOR HIGH DENSITY POLYETHYLENE LINERS IN WASTE CONTAINMENT

INTRODUCTION

Flexible membrane liner systems have become required by law in many parts of the world for hazardous waste landfills and surface impoundments. This means that regulatory agencies are endorsing and requiring the use of geomembrane liners for containment of toxic waste. Although a number of liner types can be considered in waste containment, there is a rapidly increasing trend toward the use of polymeric liners of the high density polyethylene variety.

With such emphasis and confidence given to flexible membrane liners, how can we be sure that the liner will provide maximum security for containment of hazardous wastes? Design of high quality, chemically resistant geomembranes is a very important part of the answer to this question. The chemical resistance issue for HDPE geomembranes will be considered in this paper.

With the advent of copolymer HDPE technology, geomembranes can now boast of strength, toughness, durability, chemical resistance and environmental stress crack resistance. The qualities of HDPE as a barrier material are increasing its applications in the container market. Much growth is expected for HDPE containers of agricultural chemicals, insecticides, herbicides, paint thinners, and household chemicals as well as other chemical products (1). HDPE is expected to replace more and more traditional metal and glass containers in the market place.

Advances in HDPE resin technology are responsible for its increased use as a barrier membrane for chemicals; hence, its increased (and almost exclusive) use in geomembranes for hazardous waste landfills and surface impoundments. Consequently, special attention must be given to HDPE resin selection before maximum performance against hazardous wastes can be assured.

THE IMPORTANCE OF POLYETHYLENE RESIN SELECTION

Many polymer resins carry the trade name polyethylene. However, different methods of joining the ethylene molecules together result in different characteristics of the final product. The different polyethylene materials have traditionally been classified by their densities. Low density polyethylene (LDPE) categorizes polyethylenes in the range of about 0.915 to 0.935 g/cm3, while high density polyethylene (HDPE) covers polyethylene from roughly 0.935 to 0.970 g/cm3 in density.

Proper selection of polyethylene resins is very important, even when the material is confined to the HDPE classification. Different catalyst processes and the use of different comonomers alongside ehtylene are ways to manufacture different HDPE resins. Some of these are used for injection molding, others for wire and cable applications, and still other resins are for manufacturing pipe. The cost of these materials can vary by as much as a factor of two, and only the higher quality and thus more expensive resins are suitable for rigorous geomembrane applications. The high quality HDPE resins fall under the classification of "pipe grade" resins.

Polyethylene resin selection is important because improper resin can result in poor product performance. Improper resin has been linked with poor environmental stress crack results for the product. It could thus spell failure for a waste disposal facility.

Let us consider how the different polyethylene resins vary in molecular structure, and some of the consequences of these differences to product performance.

POLYETHYLENE MOLECULAR STRUCTURE AND MORPHOLOGY

Correlations between basic molecular structure and material properties of polyethylene have been difficult to establish with certainty, but they do exist. Polyethylene has essentially three structural variations which affect its properties: 1) molecular weight and its distribution, 2) chain branching (affected by comonomer type and concentration as well as by polymerization process), and 3) amount and type of crystallinity (density is a reflection of the amount of crystallinity) (2). Because of the interplay of these variables, commercially available materials possess distinctly different properties. Hence, the various grades of HDPE resin mentioned above. Polyethylene is classified as a crystalline polymer. This means that the polyethylene chains tend to pack into a regular crystal lattice. The molecules crystallize by folding of the polymer chains, forming what are called lamellae, or platelike polymer crystals. Not only are the polymer chains arranged to form lamellae, but these lamellae are usually arranged in larger aggregates known as spherulites. Figure 1 illustrates the lamellae structure (verified by x-ray measurements) as well as the shape and appearance of spherulites (3).

Spherulites grow out radially from the nucleus until other spherulites are encountered. The size, shape, arrangements, and interaction of the spherulites impact upon the physical properties of polyethylene. For example, smaller typical diameters of spherulites have been correlated with greater resistance to stress cracking (4). Large spherulites contribute to brittleness in polymers. Developing cracks tend to avoid spherulites whenever possible and trace a path around spherulitic boundaries. Because of less surface area of the total number of "spheres", samples with large spherulites have more room for cracks to bypass the boundaries. Where there are smaller spherulites, they are more numerous, and the probability is that a growing crack front will meet a spherulite. (The analogy can be drawn here between a box filled with billiard balls and one filled with marbles.

Molecular weight distribution is important with regard to this type of stress crack development. Resins with broad molecular weight distributions have many low molecular weight species which tend to be excluded from the spherulitic structure, occupying the amorphous zones. Resins with narrow molecular weight distributions have less low molecular weight species to congregate in the spherulitic boundaries where crack propagation takes place.

The presence of crystallites and spherulites is one aspect of the structure and morphology of polyethylene which determines its physical properties. Another very important aspect is the type of molecular arrangement in the non-crystalline or amorphous regions of the polymer. This amorphous material is incorporated within and between spherulites, and between lamellae. It has already been mentioned that crack fronts tend to avoid crystalline regions and propagate through the amorphous zones. In these amorphous zones are polymer chains which are much more "loosely" arranged than in the crystallites. As Figure 2 illustrates, there are esentially three types of intercrystalline, amorphous material: 1) Celia - chains suspended from the end of a crystalline chain; 2) Loose Loops - chains which begin and end in the same lamellae, and 3) Tie-Molecules - chains which begin and end in adjacent lamellae.

Since they are partially crystallized in two lamellae, "tie-molecules" form a bridge between lamellae, and if the lamellae are in separate spherulites they tie neighboring spherulites together. Tie-molecules are the "cement" holding the lamellar "bricks" of crystalline polyethylene together.

Several parameters are important in determining a sufficient level of tie-molecules. These include 1) Molecular Weight, 2) Comonomer Content, and 3) Density.

1. Molecular Weight - High average molecular weights are indicated by low melt flow indexes of the polymer melt. Therefore, low melt flow indexes correspond to longer average polymer chains. Long average polymer chains result in more length outside the crystalline lamellae lattice and thus more tie-molecules as well as more effective tie molecule entanglements. Molecular weight distribution is also important since lower molecular weight species tend to form poor and innumerous tie-molecules.

2. Comonomer Content - Recent polyethylene technology has incorporated the use of comonomers alongside ethylene in polyethylene manufacture. These comonomers are longer chain olefins such as 1-butene or 1-hexene. The longer

chain olefins inhibit crystallinity by providing short branches in the polyethylene chain. The short branches are not as able to enter into the lamellar lattice and therefore they add to the intercrystalline tie-molecule material. The short chain branching also provides increased effectiveness of tie-molecule entangelements thereby inhibiting their ability to relax and slip past one another under stress.

3. Density - Density is an indirect measurement of cyrstallinity. The more crystalline the material or the thicker the crystalline lamellae, the fewer intercrystalline tie-molecules that hold them together.

We now begin to see some of the intracacies involved in properly specifying HDPE for use in flexible membrane liners. The problem can be thought of as two-fold: 1) maximizing tie-molecules in the amorphous zones in order to supply high strength and resistance to brittle-type failures, and 2) optimizing the level and type of crystallinity in order to provide "blocking agents" against crack propagation and the infiltration of foreign substances such as chemicals. Actually, instead of "optimizing" the level of crystallinity, the strategy should be one of maximizing the cyrstallinity while maintaining a maximum number of "tie-molecules". The problem is that increases in density are at the expense of a decrease in the number of tie-molecules.

Proper quality control of the polyethylene resin thus becomes a situation where the following parameters are controlled and monitored: 1) molecular weight and its distribution, 2) comonomer type and concentration, and 3) amount and type of crystallinity. The addition of comonomer alongside ethylene during polymerizations of copolymer HDPE essentially increases the amount and effectiveness of tie-molecules without significantly decreasing density. The variety of comonomer and its concentration are very important in determining final material properties.

The particular ethylene polymerization process is also very important in establishing final properties since it is the primary determinant of molecular weight and amount of crystallinity can be easily and routinely monitored, although indirectly, by testing for melt flow index and density.

The important point is that differences in the final properties of the polyethylene product are very largely determined by differences in the three polyethylene resin parameters of: 1) molecular weight and its distribution, 2) comonomer type and concentration (controlled chain branching), and 3) amount and type of crystallinity.

LINEAR LOW DENSITY POLYETHYLENE (LLDPE)

Linear, low density polyethylene are new technology low density polyethylenes made using high density polyethylene processes. The term is unfortunately inaccurate since if they were truely linear they would not be low density polyethylenes. What LLDPE's have done is take advantage of copolymerizations techniques. But they have done so at too great a sacrifice in density. While they have achieved certain product improvements due to increased numbers of and more effective "tie-molecules", their lack of crystallinity has compromised their strength, chemical resistance, and stress crack resistance.

LLDPE's are not the same as copolymer HDPE, nor are they considered pipe grade resins. The differences in product performance simply point to the very wide range of material quality available as polyethylene; even among similarly engineered polyethylenes.

CHEMICAL RESISTANCE STUDY

Chemical immersion testing of geomembranes is presently required by the EPA before approval of new hazardous waste facilities is granted. The protocol for testing is outlined in EPA Method 9090. Because of such routine testing, in addition to data generated by the resin manufacturers, there exists a considerable volume of information regarding the chemical resistance of HDPE.

Apart from a few strong oxidizing acids, the chemicals which reportedly damage the pipe grade quality copolymer HDPE materials fall into the category of chlorinated hydrocarbons. Other organic solvents may be absorbed into the liners causing some softening with corresponding decrease in physical property performance. However, they do not seem to actually degrade the liners. Degradation of a geomembrane liner is interpreted as an irreversible process in which useful polymer properties degenerate when exposed to the environment. The degradation takes place because of the rupture of primary and secondard chemical bonds in the polymer matrix. Chemical species as well as energy sources cause the destruction of polymer bonding (5).

As a part of this study a chemical immersion test was conducted. Sixty mil thick (1.5 mm) pipe grade quality copolymer HDPE geomembrane liner was immersed in both 100% dichloroethylene and 100% dichlorobenzene. The two chlorinated hydrocarbons were chosen because of their reportedly degradative action on HDPE. EPA Method 9090 provided the test procedure pattern for the chemicals resistance testing. The test differed from the EPA method in that sample specimens for testing were cut prior to immersion. This allowed for more liner contact with hazardous solvents and for reduced volume of solvent necessary for testing. Testing was continued for 150 days instead of the 120 days required by the EPA. The following tests were monitored:

TEST	METHOD
Tensile Properties	ASTM D638, Type IV Specimen 2 ipm
Initial Tear Resistance	ASTM D1004, Die C
Puncture Resistance	ASTM 101B, Method 2065
Weight Change	1" x 3" Specimen
Thickness Change	1" x 3" Specimen

Two temperature conditions were maintained for each of the chemical solvents in the study, 23 degrees C and 50 degrees C (as per Method 9090). Tables 1-4 list the results of the study. Sample specimens were cut both parallel to machine direction as well as perpendicular to machine direction in order to check any possible polymer orientation effects. Three specimens were tested for each line entry in Tables 1-4. Specimens were checked at 60, 100, and 150 day intervals. The averaged results and percent change in test property values are recorded in Tables 1 and 2 for dichloroethylene, and Tables 3 and 4 for dichlorobenzene.

There are no well defined standards for determining if the results from a Method 9090 type immersion indicate if the liner "passed" or "failed". But, examining the results in Tables 1-4 we can make the following remarks. Dichlorobenzene appears to have a greater effect on the liner than does dichloroethylene. In the case of dichloroethylene the sample specimens seem to have stabilized by 60 days immersion period. For dichloroethylene, any reaction with the HDPE appears to have ceased. In fact, the change may well be due to absorption of solvent only, without chemical reaction. For dichlorobenzene more data should be taken because it is unclear. Tensile elongations at break seem to be on the increase through 150 days of immersion, while some of the other tests are not so clear. In the case of dichlorobenzene, then, there may well be an ongoing reaction with the liner since the changes do not seem to have stabilized.

These conclusions are confirmed by the results of thermal-oxidative stability testing of the liner at the 60, 100, and 150 day intervals of immersion. Thermal-oxidative stability testing is a convenient and practical approach to determining the extent of polymer degradation in geomembrane liners. High temperatures and highly reactive oxygen are combined in thermal-oxidative stability testing in order to accelerate the reactions responsible for the destruction of polymer bonding. If degradation had taken or is already taking place, then thermal-oxidative stability testing will indicate a degraded condition in the sample because of reduced stability to thermal-oxidative conditions.

In thermal-oxidative stability testing, since the reactions of polymer degradation are exothermic, rapid deterioration shows up on a differential scanning calorimeter (DSC) as heat flows out of the sample. The time at which these degradative reactions occur in a run-away fashion is therefore visible on the DSC by the heat released in the destructive reactions. The time which the sample requires to reach this run-away state of degradation is called the oxidative induction time (OIT). OIT therefore provides a convenient measure of how long the liner sample is able to withstand thermal-oxidative stress.

Table 5 displays results of thermal-oxidative testing of the pipe grade quality copolymer HDPE liner during chemical immersion testing at the intervals of the test. The OIT's were run according to instrument manufacturer recommendations. A small sample of copolymer LLDPE liner was also tested for thermal-oxidative stability during chemical immersion alongside the HDPE.

The results of Table 5 indicated that the dichloroethylene does not actually degrade the HDPE, but that the dichlorobenzene seems to do so. The HDPE retained its thermal oxidative stability in dichloroethylene while losing 59% of its stability in dichlorobenzene over the 150 days. The LLDPE also appears to have stabilized in the dichloroethylene but lost 55% of its stability. The LLDPE lost 84% of its thermal-oxidative stability in dichlorobenzene over the 150 days.

CONCLUSIONS

Dichloroethylene and dichlorobenzene appear to have different effects on pipe grade copolymer HDPE. Not all chlorinated hydrocarbons should be considered to degrade HDPE at 100% concentration. Some may react slowly with the liner while others may be only slightly absorbed.

Thermal-oxidative degradation studies during chemical immersion testing may actually provide better, more concrete results in chemical resistance analysis. The thermal-oxidative analysis results for this study were much easier to interpret than the tests required by EPA 9090. Monitoring chemical resistance tests by thermal-analysis would provide many conveniences as well. For instance, since test samples are very small, reduced amounts of chemical waste would be required for testing.

The importance of polyethylene resin selection in the manufacture of high quality geomembrane liners was confirmed. The results of thermal-oxidative analysis during chemical resistance testing indicate that the pipe grade quality copolymer HDPE performs much better than the copolymer LLDPE material.

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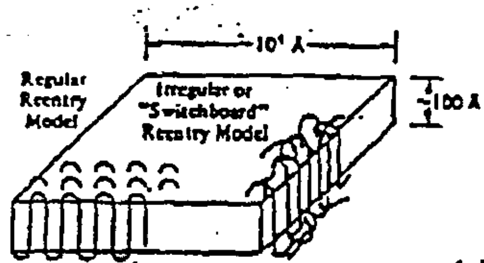
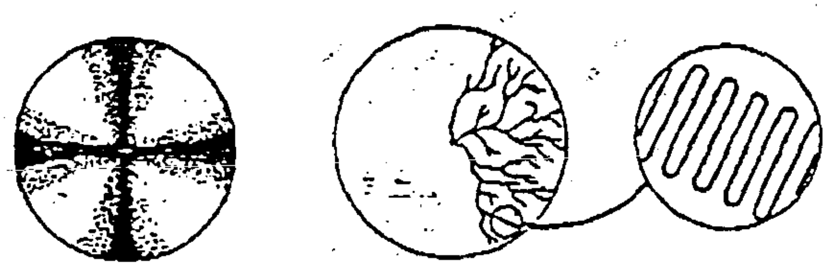
FIGURE 1 [(3)]



(a)

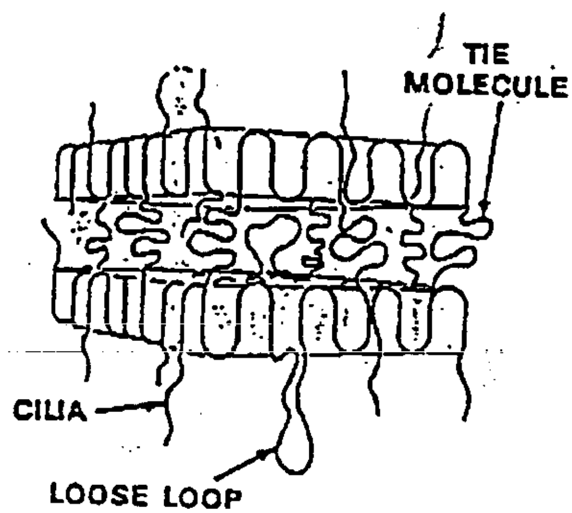
(a) Polymer crystal showing folded chain arrangement which forms lamellar crystal plate.



(b) (c) (d)

(b) Appearance of a spherulite between crossed polaroids of an optical micrograph.
(c) Branching of lamellae in spherulite.
(d) Close up showing orientation of lamellar chains.

FIGURE 2 (2)



Basic structural elements between polyethylene lamellae.

TABLE 1

TENSILE PROPERTIES TESTING OVER 150

DAYS OF IMMERSION IN DICHLOROETHYLENE

60 MIL HDPE AT 23°C

MD	Yield Strength (psi)	Yield Elongation (%)	Break Strength (psi)	Break Elongation (%)
Control	2832	15	4581	825
60 Days	2589	17	4905	905
% Change	-8.6	+13	+7.1	+9.7
100 Days	2551	17	4897	888
% Change	-9.9	+13	+7.6	
150 Days	2582	17	4695	855
% Change	-8.8	+13.3	+2.5	+3.7
TD				
Control	2908	15	4861	845
60 Days	2828	16	5252	900
% Change	-2.8	+6.7	+8.	+6.5
100 Days	2657	17	5280	938
% Change	-8.6	+13	+8.6	+11
150 Days	2691	15	4986	922
% Change	-7.5	Ø	+2.6	+9.1

60 MIL HDPE AT 50°C

MD	Yield Strength (psi)	Yield Elongation (%)	Break Strength (psi)	Break Elongation (%)
Control	2832	15	4581	825
60 Days	2628	17	4807	948
% Change	-7.2	+13	+5	+15
100 Days	2425	17	4783	890
% Change	-14.4	+13	+4.4	+7.9
150 Days	2564	17	4537	853
% Change	-9.5	+13.3	-1	+3.4
TD				
Control	2908	15	4861	845
60 Days	2674	17	4903	865
% Change	-8.1	+13	+1	+2.4
100 Days	2566	17	4939	915
% Change	+6.6	+13	+1.6	+8.3
150 Days	2670	17	5107	925
% Change	+11	+13.3	+9.1	+9.5

MD - Sample specimens tested in machine direction of process manufacture.

TD - Sample specimens tested in transverse direction to process manufacture.

TABLE 2

OTHER PHYSICAL PROPERTIES TESTING OVER 150

DAYS OF IMMERSION IN DICHLOROETHYLENE

Weight Change at 23°C

	Control	60 Days	% Change	100 Days	% Change	150 Days	% Change
MD	2.8055	2.9436	+5	2.9570	+5.4	2.8686	+2.2
TD	2.7131	2.8469	+15	2.8590	+5.4	2.7743	+2.3

Weight Change at 50°C

MD	2.7043	2.8856	+6.7	2.8837	+6.3	2.7710	+2.5
TD	2.6159	2.7920	+6.7	2.7926	+6.8	2.6810	+2.5

Thickness Change at 23°C

MD	.056"	.056"	Ø	.059"	+1.8	.057"	+1.8
TD	.056"	.057"	+1.8	.057"	+1.8	.057"	+1.8

Thickness Change at 50°C

MD	.056"	.057"	+1.8	.058"	+3.6	.057"	+1.8
TD	.056"	.057"	+1.8	.057"	+1.8	.057"	+1.8

Tear Resistance at 23°C

MD	56	48	-14.3	51	-8.9	52	-7.1
TD	57	55	+17	53	+13	53	+13

Tear Resistance at 50°C

MD	56	49	-12.5	46	-18	48	-17.7
TD	47	54	+15	51	+8.5	54	+15

Puncture at 23°C

	79	65	-8.5	60	-24	65	-17.7

Puncture at 50°C

	71	64	-9.8	60	-24	66	-16.5

MD - Sample specimens tested in machine direction of process manufacture.

TD - Sample specimens tested in transverse direction of process manufacture.

TABLE 3

TENSILE PROPERTIES TESTING OVER 150

DAYS OF IMMERSION IN DICHLOROBENZENE

60 MIL HDPE AT 23°C

MD	Yield Strength (psi	Yield Elongation (%)	Break Strength (psi)	Break Elongation (%)
Control	2777	15	5218	820
60 Days	2647	17	5243	920
% Change	-4.7	+13	+.5	+12
100 Days	2340	22	4909	895
% Change	-16	+47	-6	+9.1
150 Days	2316	17	4514	873
% Change	-16.6	+13	-13.5	+6.5
TD				
Control	2971	15	5021	795
60 Days	2578	16	4396	855
% Change	-13	+6.7	-12.4	+7.5
100 Days	2284	23	4430	880
% Change	-23	+53.3	-12	+11
150 Days	2535	20	4579	983
% Change	-14.7	+33	-8.8	+23.6

60 MIL HDPE AT 50°C

MD				
Control	2777	15	5218	820
60 Days	2406	17	4704	855
% Change	-13.4	+13	-10	+4.3
100 Days	2080	23	4388	905
% Change	-25	+53.3	-16	+10.4
150 Days	2276	19	5097	978
% Change	-18	+26.7	-2.3	+19
TD				
Control	2971	15	5021	795
60 Days	2660	17	4431	805
% Change	-10.5	+13	-12	+1.3
100 Days	2226	25	4356	938
% Change	-25.1	+66.7	-13.2	+18
150 Days	2400	19	4677	929
% Change	-17.7	+26.7	-7	+17

MD - Sample specimens tested in machine direction of process manufacture.

TD - Sample specimens tested in transverse direction to process manufacture.

TABLE 4

OTHER PHYSICAL PROPERTIES TESTING OVER

150 DAYS OF IMMERSION IN DICHLOROBENZENE

	Control	60 Days	% Change	100 Days	% Change	150 Days	% Change
			Weight Change at 23°C				
MD	2.9264	3.2478	+11	3.2487	+11	3.0729	+5
TD	2.8095	3.1154	+11	3.1189	+11	2.9614	+5.4
			Weight Change at 50°C				
MD	2.8680	3.2833	+14	3.2398	+13	3.0240	+5.4
TD	2.7631	3.1662	+14	3.1236	+13	2.9002	+5
			Thickness Change at 23°C				
MD	.057"	.059"	+3.5	.059"	+3.5	.059"	+3.5
TD	.057"	.058"	+1.8	.059"	+3.5	.059"	+3.5
			Thickness Change at 50°C				
MD	.059"	.060"	+1.7	.60	+1.7	.060"	+1.7
TD	.058"	.059"	+1.7	.60	+3.4	.058"	Ø
			Tear Resistance at 23°C				
MD	54	43	-20	40	-26	40	-26
TD	55	47	-14.5	74	-20	44	-20
			Tear Resistance at 50°C				
MD	54	41	-24	39	-27.8	41	-24.1
TD	55	44	-20	42	-23.6	45	-18.2
			Puncture at 23°C				
	68	77	+13	67	-1.5	60	-12
			Puncture at 50°C				
	68	75	+10	74	+8.8	76	+12

MD - Sample specimens tested in machine direction of process manufacture.

TD - Sample specimens tested in transverse direction of process manufacture.

TABLE 5

CHEMICAL RESISTANCE COMPARISON OF COPOLYMER HDPE LINER TO COPOLYMER LLDPE LINER BY MEASURING CHANGES IN STABILITY TOWARD THERMAL-OXIDATIVE DEGRADATION

Dichloroethylene

Sample[2]	OIT[1] (minutes) Copolymer HDPE	Copolymer LLDPE
Control	85	44
60 Day	90	13
100 Day	91	20
150 Day	90	20
Final % Change	+5.9%	-54.5%

Dichlorobenzene

Sample	OIT (minutes) Copolymer HDPE	Copolymer LLDPE
Control	85	44
60 Day	65	8
100 Day	65	8
150 Day	35	7
Final % Change	-58.8%	-84%

[1] OIT (Oxidative Induction Time) determined by Differential Scanning Calorimeter @ 200°C, 1 atm of O_2.

[2] Samples immersed in chlorinated hydrocarbon at 23°C.

APPENDIX P

LEACHATE RADIATION DOSE ESTIMATES

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Annual Dose to Liner Given
Radionuclide Leachate Concentrations.

	Leachate	Dose	Dose	Dose
	Concentration	Coefficient a	Coefficient b	Rate
Radionuclide	(pCi/L)	[(Sv/s)/(Bq/m3)]	[(rem/yr)/(pCi/L)]	(rem/yr)
Am-241	78	2.98E-18	3.48E-07	3E-05
Be-7	340	5.97E-18	6.97E-07	2E-04
C-14	79600	2.55E-19	2.98E-08	2E-03
Cs-137+D	8976	7.98E-17	9.32E-06	8E-02
Cr-51	300	3.82E-18	4.46E-07	1E-04
Co-58	7	1.20E-16	1.40E-05	1E-04
Co-60	315	3.11E-16	3.63E-05	1E-02
Eu-152	4627	1.45E-16	1.69E-05	8E-02
Eu-154	1038	1.66E-16	1.94E-05	2E-02
Eu-155	90	7.32E-18	8.55E-07	8E-05
Pu-238	29	9.55E-20	1.12E-08	3E-07
Pu-239/240	622	9.13E-20	1.07E-08	7E-06
K-40	4000	5.46E-17	6.38E-06	3E-02
Ra-226+D	470	2.78E-16	3.25E-05	2E-02
Na-22	1350	2.78E-16	3.25E-05	4E-02
Sr-90+D	35600	7.64E-17	8.92E-06	3E-01
Tc-99	17	2.88E-18	3.36E-07	6E-06
Th-228+D	22	2.48E-16	2.89E-05	6E-04
Th-232	35	7.65E-20	8.94E-09	3E-07
U-233/234	14396	9.56E-20	1.12E-08	2E-04
U-235+D	200	2.27E-17	2.65E-06	5E-04
U-238+D	18048	6.06E-17	7.08E-06	1E-01
			TOTAL =	7E-01
a Dose coefficient to skin via water immersion (FGR #12, Table III.2).				
b Uses a conversion factor of:		1.17E+11		
Note: Calculations appropriate for a skin thickness of 1.3 mm.				

Annual Dose to Liner Given
Radionuclide Leachate Concentrations.

Rad. Parent and				
Daughter Combinations:				
Cs-137	3.33E-18			
Ba-137m	7.65E-17			
total:	7.98E-17			
Ra-226	9.31E-19			
Rn-222	4.90E-20			
Po-218	1.37E-21			
Pb-214	4.49E-17			
Bi-214	2.32E-16			
Po-214	1.02E-20			
total:	2.78E-16			
Sr-90	9.71E-18			
Y-90	6.67E-17			
total:	7.64E-17			
Th-228	3.18E-19			
Ra-224	1.30E-18			
Rn-220	4.73E-20			
Po-216	2.07E-21			
Pb-212	2.35E-17			
Bi-212	5.47E-17			
Po-212 (64%)	0			
Tl-208 (36%)	1.68E-16			
total:	2.48E-16			
U-235	1.89E-17			
Th-231	3.79E-18			
total:	2.27E-17			
U-238	6.83E-20			
Th-234	1.33E-18			
Pa-234m	5.92E-17			
total:	6.06E-17			